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July 12, 2002

Emergency and Remedial Response Division - Region II
United States Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866

Attn: Mr. Richard Winfield, Remedial Project Manager

Re: Submission of Information Pursuant to:
Diamond Alkali Superfund Site,
Operable Unit 2 (Passaic River Study Area)
Request for Information dated February 22, 2002
Pursuant to 42 U.S.C., 9601-9675

Dear Mr. Winfield:

On April 24, 2002, PVSC responded to a February 22, 2002 letter from Mr. Lynch, Acting Strategic Integration Manager. Per Mr. Lynch's request, PVSC provided the information outlined in his "Attachment B".

Ms. McKenna, of my staff, has since discovered additional information and informed you in a telephone conversation. You then advised Ms. McKenna to forward this addendum, which he stated did not require notarization. The additional information is provided as an Enclosure to this letter. Please call Mr. Sheldon Lipke, of my staff, with any questions at (973) 817-5782.

Very truly yours,

PASSAIC VALLEY SEWERAGE COMMISSIONERS

Robert J. Davenport
Executive DirectorRJD/ja
Enclosuresc: Ms. Kedari Reddy, Assistant Regional Counsel (w/enclosures)
Mr. Kevin Lynch, ERRD, Acting Strategic Integration Manager
Mr. Sheldon Lipke, PVSC
Mr. Peter Sheridan, Esq., Graham Curtain and Sheridan
Mr. Joseph A. Ferriero, Esq., PVSC Chief Counsel

946140001

WORK PLAN

TO

**PERFORM TOXICS MONITORING/LOADINGS AND
TOXICS TRACKDOWN INVESTIGATIONS FOR THE NEW
YORK/NEW JERSEY HARBOR ESTUARY PROGRAM**

Submitted to:

The New Jersey Department of Environmental Protection

Submitted by:

The New Jersey Harbor Dischargers Group

February 10, 1999

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BACKGROUND

Several million cubic yards of sediment are dredged each year from channels and berthing areas in the New York/New Jersey Harbor Estuary. The sediments are mostly fine-grained and are subject to severe contamination from nearly three billion gallons per day of point-source municipal and industrial wastewater, stormwater, combined sewer overflows, leakage from Superfund Sites, and air deposition. This contamination by organic and inorganic chemicals is constraining continued ocean disposal and prompting the evaluation of new dredging options, particularly ones that can accommodate large volumes of contaminated material.

Within the past few years, the testing requirements for the ocean disposal of dredged material from the New York/New Jersey Harbor have been revised. New protocols for amphipod toxicity testing and dioxin analyses in both dredged sediments and test organisms have shifted the classification of Harbor sediments toward a higher percentage of "contaminated" material. The new testing requirements have resulted in more material being classified as Categories 2 (demonstrating some bioaccumulation potential) and 3 (sufficiently toxic to prevent the material from being disposed of in the ocean). The most serious consequence of this reclassification is that Category 3 material, estimated to be about 30 percent (U.S. Army Corps of Engineers, 1995) of all proposed dredged sediments, does not have an acceptable large-scale disposal site anywhere in the region. The cost of disposing of some Category 3 sediments recently was about \$118 per cubic yard, as compared to \$5 per cubic yard, which was the average cost of ocean disposal in 1989 without capping (O'Connor, 1989).

Given the prohibitive costs of disposal of contaminated material and the environmental concerns about the possible effects, there is broad agreement among federal and state governments, environmental organizations, the Port Authority, scientists and the general public that a comprehensive plan is needed to reduce sediment contamination, so that expensive, confined disposal options and decontamination will not always be necessary in the future. Two major management

programs, the New York/New Jersey Harbor Estuary Program (HEP; a component of the National Estuary Program) and the Dredged Material Forum (a special multi-organization effort convened to develop a short- and long-term dredged material disposal plan for New York Harbor), have joined together to develop and implement a sediment contaminant reduction strategy. A special work group has been established to develop a contaminant reduction plan that would review the current toxics control strategies already recommended by HEP, to determine whether they are sufficient to reduce future dredged material contamination, and if not, to recommend additional actions. As a guideline, the work group was asked to recommend a plan that would result in the classification of all future dredged material as Category 1, and to assess when, if ever, this could be achieved.

After several months of work, the Sediment Contamination Reduction Work Group (Work Group) recommended a strategy that has since been incorporated into the New York/New Jersey Harbor Estuary Program's (1996) proposed Comprehensive Conservation and Management Plan (CCMP). The contaminant reduction plan is depicted in schematic form in Figure 1. Many of the tasks included in the strategy were already incorporated in to the CCMP. Others, highlighted in the figure as "new" are ones that were suggested by the Work Group. The sediment contamination reduction plan has both an assessment phase (shown on the left side of the figure) and an action plan (shown on the right). Basically the plan calls for: (1) identifying the contaminants of concern; (2) delineating and quantifying their sources; and (3) implementing strategies to reduce or eliminate them from entering the estuary.

A major task identified by the Work Group, for which funding has recently been provided to the New York Department of Environmental Conservation (DEC) and the New Jersey Department of Environmental Protection (NJDEP), is a Contaminant Assessment and Reduction Project (CARP). The information that will be collected through this project is critical to both an ongoing modeling effort designed to develop a sediment contaminant reduction management strategy to assist the Port Authority (Thomann et al. 1989), and to any reduction measures that could be implemented in the short-term without the modeling results. Without this information, a comprehensive contamination reduction strategy can never be implemented.

RATIONALE AND OBJECTIVES

In response to the needs of the CARP program, the New Jersey Harbor Dischargers Group (NJHDG), a consortium of ten sewerage authorities discharging into the New York/New Jersey

Harbor complex, is submitting this Work Plan to (1) perform toxics monitoring to develop toxics loads, and (2) conduct toxics trackdown investigations for the sanitary sewage outfalls (POTWs), combined sewer overflows (CSOs) and stormwater outfalls (SWOs) under the Group's collective jurisdiction. This program will address three of the boxes in Figure 1 (ID Contaminants of Concern; ID Sources of Contaminants; and trackdown and cleanup/CSO & SW Abatement), which will provide major progress towards achieving a long-term reduction in the contamination of Harbor sediments.

The specific benefits to the Port Authority of the contaminant monitoring/loadings and trackdown investigations are: Contaminant Monitoring/Loadings Investigations 1. Upon completion of the point source toxics monitoring studies, toxics loads will be developed based on measured or projected flows, and the Port Authority will then know which point source discharges (and/or categories of point source discharges) are responsible for contributing the primary loadings of sediment (dredge spoil) contaminants to the Harbor. This information will be valuable for prioritizing outfalls for the toxics trackdown investigations. 2. The results of the monitoring/loadings investigations will provide loadings data (concentration x flow) to be used in the concurrent modeling efforts, which will allow for the development of a calibrated water quality/sediment quality/hydrodynamic model. This model will allow the Port Authority and the states of New Jersey and New York to evaluate how various contaminant abatement strategies will affect future sediment contamination in the Harbor (specifically shipping lanes/berthing areas), and will allow the opportunity for resource managers to select the most cost effective options. Contaminant Trackdown Investigations 1. The toxics trackdown investigations will identify specific sources of contaminants to the POTW, CSO, and SWO systems. When specific contaminant sources have been identified, the information will be provided to the appropriate regulatory authority for subsequent action to reduce sediment contaminant contributions to the Harbor. 2. When specific toxics sources have been identified, the overall impact of eliminating or reducing those sources can be evaluated by the calibrated water quality model, so that selected actions can be contrasted with other toxics reduction/source control options. This approach will provide the resource managers with the opportunity to make well-informed contaminant management decisions focused on cost-effectiveness.

NJHDG feels that the work presented in this Work Plan is a very effective approach to identify the vast majority of the current sources of toxic sediment contaminants to the Harbor, because it is highly likely that a substantial portion of the sediment contaminants entering the Harbor do so through point sources (POTWs, CSOs, SWOs), rather than as a consequence of direct runoff. NJHDG feels particularly well qualified to administer a program such as the one being proposed,

because there is no group that is better informed about the details of the sanitary, CSO and SWO systems affecting the New Jersey portion of the Harbor than NJHDG. Furthermore, the sewer systems operated by the NJHDG members cover the vast majority of the urban watershed contributing input to the Harbor.

NJHDG will perform the work outlined in this Work Plan to accomplish three primary objectives: The first objective is to determine which outfalls (POTWs, CSOs, SWOs) are responsible for contributing meaningful quantities of contaminants which are likely to be accumulating in Harbor sediments; the second objective is to determine the contaminant concentrations and the loads of the sediment contaminants identified through the first objective; the third objective is to track the toxics identified through the first and second objectives (and those which are already understood to be problematic) through the sewer systems, with the goal of identifying the ultimate sources of the toxics contributions.

NJHDG will accomplish these objectives through a series of tasks, each of which will build upon the previous task(s) to produce a product that will be beneficial to the Port Authority, HEP, the New Jersey Division of Marine Resources and NJDEP. The specifics of the toxics monitoring/loadings and toxics trackdown investigations are discussed in the two sections that follow; a discussion of the approach to be utilized for meeting the first objective (above) is imbedded in the toxics monitoring/loading section.

TOXICS MONITORING/LOADINGS DETERMINATIONS FROM END-OF-PIPE SOURCES: POTWs, CSOs, AND SWOs

BACKGROUND

In order to develop and calibrate a water quality/hydrodynamic model for the management of sediment contamination in the New York/New Jersey Harbor, it is essential to measure the concentrations of contaminants and to document the loads (concentration x flow) of contaminants entering the Harbor. A principle source of contaminant loads to the Harbor is point source contributions; POTWs, CSOs, and SWOs. Although it is widely recognized that these point sources contribute a meaningful portion of the sediment contaminants to the Harbor, there has never been a systematic effort to accurately characterize the full range of contaminant loads of the significant point source discharges. This component of the Work Plan will address that need.

RATIONALE AND OBJECTIVES

This section of the New Jersey Work Plan has been prepared to present the approach to be used to conduct the toxics monitoring/loadings investigations for the sanitary sewage outfalls (POTWs), combined sewer overflows (CSOs) and stormwater outfalls (SWOs) under the collective jurisdiction of the 10 POTWs discharging to the Harbor complex (Passaic Valley Sewerage Commission, North Hudson Sewerage Authority, Edgewater Municipal Utility Authority, Joint Meeting of Essex and Union Counties, Linden Roselle Sewerage Authority, Middlesex County Utility Authority, North Bergen Municipal Utility Authority, Rahway Valley Sewerage Authority, Secaucus Municipal Utility Authority and Bergen County Utility Authority). This program will result in major progress towards achieving a long-term reduction in the contamination of Harbor sediments by providing information essential for calibrating a water/sediment quality model for the Harbor.

The work outlined in this section of the Work Plan will be performed to accomplish two primary objectives: The first objective is to determine which outfalls (POTWs, CSOs, SWOs) are responsible for contributing contaminants which are likely to be accumulating in Harbor sediments; the second objective is to determine the concentrations of the contaminants (identified through the first objective) that are contributing to contamination of Harbor sediments and aquatic organism tissues throughout the Harbor, so that loads to the Harbor can be calculated.

TECHNICAL APPROACH

A key component of the toxics monitoring/loadings program to be performed by NJHDG is the potential use of a state-of-the-art sampling tool to collect the samples from which toxics loadings can be determined. The sampling tool which may to be utilized under certain circumstances in conjunction with grab samples is the Trace Organics Platform Samplers (TOPS), which is used to collect samples for the trace organic analyses to ultimately develop the loadings for this program.

TOPS was designed by the New York State Department of Environmental Conservation (DEC), and has been utilized for quantitative organic assessments by DEC for several years (Litten 1997). The principal components of a TOPS sampling device are a filter, a column containing XAD resin, a pump and a microprocessor. The device functions by pumping known quantities of water (or effluent) through a filter and then through the XAD column. Bioaccumulative organic constituents

adsorb to the XAD resin column, and because the volume of water that passes over the column is measured, it is possible to determine the quantities of organic compounds in the sample matrix by eluting the XAD column with a solvent and performing trace organic analyses to measure the constituents.

TOPS devices can be produced in large numbers, are reasonably priced, and can process very large volumes of water. TOPS can also operate over extended periods of time, so that temporal changes in water quality can be assessed. Because these devices have the ability to pump very large quantities of water, TOPS has the potential to detect extremely dilute trace bioaccumulative contaminants.

Grab samples will also be utilized in those instances where the contaminants in the sample(s) are in sufficiently high concentrations to allow for direct contaminant measurement, without exceeding the analytical detection limits for the contaminants of interest. NJHDG anticipates that for the majority of the POTW, CSO and SWO sample to be analyzed, contaminant concentrations will be sufficiently high to allow us to collect grab samples.

The tasks to be conducted utilizing grab samples and selected TOPS sample to achieve the objectives outlined above are as follows:

Subtask 1. In this task the investigators, in cooperation with NJDEP, will select representative CSO and SWO sites that, in addition to the POTW outfalls, will be evaluated over the course of this investigation. The selection of CSO/SWO monitoring sites will be made by evaluating the types of industries and land uses in each of the CSO and SWO service areas, and eliminating from further consideration those CSO and SWO sampling locations which are least likely to be responsible for contributing meaningful loads of contaminants of concern. Consideration must be given to selecting CSO/SWO sampling sites that are representative of major drainage areas for two reasons: (1) because the number of samples which can be collected for this program is limited, it is important that the samples collected are representative of as large a number of CSO discharges as possible; and (2) because collecting samples at a relatively "down stream" station will be particularly useful for the subsequent trackdown portion of this CARP program.

The selection of representative CSO and SWO sampling locations will be problematic, because there are a large number of considerations to be addressed in site selection for the ten diverse sewerage authorities that constitute NJHDG. Therefore, it will be important to work closely with NJDEP and the communities in the service areas of the POTWs to select the CSO and SWO sampling sites that are the most likely to be responsible for discharging bioaccumulative sediment contaminants.

NJDEP has developed an inventory of contaminated sites using a GIS framework, and that information could be very helpful in identifying the best candidate CSO and SWO locations for this investigation. In addition, information contained in NJDEP's Surface Drainage and Land Use Reports and Sewer System Inventory and Assessment Reports may be helpful in selecting representative sampling locations. Candidate CSO sampling locations include the influents to the POTWs with combined systems, major interceptor points, the actual CSO discharges and other surrogate monitoring points. Working with NJDEP, NJHDG will select sampling locations which are both representative (from a water quality perspective) of CSOs which discharge to the Harbor in the area sampled, and are accessible for routine sampling during storm events.

In identifying SWO sampling locations, NJHDG will consider both representativeness and accessibility during the storm events. Careful consideration will be given to sampling the SWOs which were sampled in 1997/1998 for NJHDG's nickel/copper monitoring/modeling program; those SWOs proved to be reliable stormwater sampling locations which were accessible. Consideration will also be given to sampling the Peripheral Ditch which collects stormwater from the Newark International Airport.

For the selection of both the CSO and SWO sampling locations, NJHDG will work closely with NJDEP to assure that all parties agree on the sampling locations.

Subtask 2. A Quality Assurance Project Plan (QAPP) will be prepared and submitted to NJDEP and the SCRWG for their review. This QAPP will provide a detailed presentation of the technical approach and all of the sampling and analytical procedures to be utilized throughout the program, including Standard Operating Procedures. After receipt of comments on the QAPP, the necessary revisions will be made, and the investigators will proceed to implement the remainder of the tasks.

Subtask 3. Subtask 3 will focus on collecting the necessary samples to measure toxics using grab samples and trace organics platform samplers where necessary. For those samples which cannot be analyzed within 72 hours, the samples will be placed in polycarbonate containers and frozen for future analysis. This preservation approach has been proven to be effective for all of the contaminants to be measured in this program. Targeted organic and metal analyses will be coupled with flow information (obtained directly from the POTWs for POTW outfalls and from runoff models for CSOs/SWOs) to determine toxics loads to the Harbor. It will be essential to closely coordinate this effort with the Harbor contaminant work proposed by NYDEC, with the CARP modeling needs, and with other toxics-related work proposed by NJDEP.

Subtask 4. All of the data generated in the monitoring/loadings investigation will be collected, summarized, evaluated and analyzed in Subtask 4. The data will be provided in a timely manner to any of the investigators who are in need of the information; results will be provided to the interested parties as soon as they are available and have been checked to assure quality. A priority will be placed on delivering the monitoring/loading data to the appropriate modeling organization(s) in a timely manner, so that the contaminated sediment management model(s) can be developed and calibrated for CARP.

It is important to recognize that NJHDG completely understands that the ultimate goal of the work to be performed under this section of the Work Plan is to provide the appropriate agencies (the Port Authority, the New Jersey Department of Maritime Resources and NJDEP) with tools to manage the contamination of Harbor sediments so that dredged materials can be safely disposed of in the future; the investigators recognize the importance of working diligently to assure that the appropriate types of information are provided to the appropriate institutions in a timely manner.

Subtask 5. In Subtask 5 NJHDG will generate a draft final data summary and analysis report that will be circulated through SCRWG for comments; upon receipt of comments, a final report will be generated, circulated through SCRWG and submitted to NJDEP and CARP.

Throughout the conduct of this investigation the investigators will maintain regular contact with CARP and the other appropriate HEP work groups (such as the Toxics Work Group) to insure that the necessary feedback is obtained as the investigation moves forward, and to coordinate the efforts with work being performed by NYDEC and other institutions working in the Harbor.

TRACKDOWN OF CONTAMINANTS WITHIN POTW, CSO and SWO SYSTEMS

BACKGROUND

In order to reduce and/or eliminate sediment contaminants in the Harbor, it is necessary to identify the sources of the contaminants so that appropriate reduction or elimination actions can be implemented. Since POTWs, CSOs and SWOs are widely recognized to likely be major contributors of sediment contaminants, it is important to conduct toxics trackdown efforts to identify the sources of toxics in POTW, CSO and SWO systems. The toxics trackdown effort for the POTWs, CSOs and SWOs discharging to the Harbor complex is the subject of this section of the NJHDG plan.

RATIONALE AND OBJECTIVES

This preliminary Work Plan is being submitted to perform toxics trackdown investigations for the sanitary sewage outfalls (POTWs), combined sewer overflows (CSOs) and stormwater outfalls (SWOs) in the service areas of the New Jersey POTWs discharging into the Harbor complex (Passaic Valley Sewerage Commissioners, North Hudson Sewerage Authority, Edgewater Municipal Utilities Authority, Joint Meeting of Essex and Union Counties, Linden Roseille Sewerage Authority, Middlesex County Utility Authority, North Bergen Municipal Utility Authority, Rahway Valley Sewerage Authority, Secaucus Municipal Utility Authority and Bergen County Utility Authority). This program will provide major progress towards achieving a long-term reduction in the contamination of Harbor sediments. The specific benefits to the Port Authority of the contaminant trackdown investigations are: 1. The toxics trackdown investigations will identify specific sources of contaminants to the POTW, CSO, and SWO systems. When specific contaminant sources have been identified, the information will be provided to the appropriate regulatory authority for subsequent action to reduce sediment contaminant contributions to the Harbor. 2. When specific toxics sources have been identified, the overall impact of actions taken to eliminate or reduce those sources can be evaluated by the calibrated water/sediment quality model, so that comparisons can be made with other toxics reduction/source control options. This approach will provide the resource managers with the opportunity to make well-informed contaminant management decisions.

The work presented in this Work Plan is an effective approach to identify what is likely to be a substantial number of the current sources of toxic sediment contaminants to the Harbor, because it is probable that much of the sediment contamination entering the Harbor enters through point sources (POTWs, CSOs, SWOs), rather than as a consequence of direct runoff.

The work outlined in this section of the Work Plan will be performed to accomplish one primary objective: To track the toxics identified through the toxics monitoring/loading work (and those which are already understood to be problematic) through the sewer systems to identify the ultimate sources of the toxics contributions.

TECHNICAL APPROACH

The tasks which will be conducted to perform the toxics trackdown component of this program are as follows:

Subtask 1. During Subtask 1 the investigators will work with EPA Region II to convene a meeting(s) of the HEP Toxics Trackdown Work Group (TTWG). During this meeting(s), the investigators will work with this Work Group to obtain their input as to how to proceed with this investigation, to coordinate this work with the work planned by the New York State Department of Environmental Conservation (NYDEC), and to coordinate with other efforts as they evolve. It is critical to the success of this investigation that this integration take place, and it is essential to coordinate this program with the appropriate HEP Work Groups.

Subtask 2. In this Subtask the investigators, in cooperation with NJDEP and the appropriate HEP workgroup(s), will select the CSOs, SWOs and POTWs that will be evaluated over the course of this investigation. The selections will be made by evaluating the data collected during the toxics monitoring/loadings investigations, and other information which may be available through NJDEP and NJHDG members. Priority will be given to those sources which are most likely to be responsible for contributing meaningful loads of sediment contaminants of concern.

Subtask 3. A Quality Assurance Project Plan (QAPP) will be prepared by the investigators and submitted to NJDEP and the TTWG for their review. This QAPP will provide a detailed presentation of the technical approach and all of the sampling and analytical procedures to be utilized throughout the program, including Standard Operating Procedures. After receipt of comments on the QAPP, the investigators will make the necessary revisions, and will proceed to implement the remainder of the tasks.

Subtask 4. During Subtask 4 the investigators will perform toxics trackdown investigations in the POTW service areas identified above (if necessary), and in the CSO and SWO service areas which have been shown to be contributing meaningful sediment contaminant loads to the Harbor. A combination of passive in situ samplers and grab samples, coupled with targeted chemical analyses (based upon results obtained in the toxics monitoring/loadings investigations) will be utilized to work upstream in the sewer systems. The goal will be to identify the specific sources of potential sediment contaminants which are entering the Harbor through these discharges. The selection of sites in the sewer systems for sample collection will be determined by both initial screening evaluations, and by other relevant data obtained from the POTWs, from the service area communities, and from NJDEP.

Subtask 5. All of the data generated in the trackdown investigation will be summarized and analyzed in Subtask 5, and provided to NJDEP and any of the other investigators who are in need of the information; results will be provided to the interested parties as soon as they are available and have been checked to assure quality.

Subtask 6. In Subtask 6 a draft final report will be generated and will be circulated through TTWG for comments; upon receipt of comments, a final report will be generated, circulated through TTWG, and submitted to NJDEP.

Throughout the conduct of this element of the investigation, NJHDG will maintain regular contact with the appropriate HEP work groups to insure that the necessary feedback is obtained as the investigation moves forward, and to coordinate the efforts with work being performed by NYDEC and other institutions working in the Harbor. NJHDG understands that the goal of this investigation is to provide information that will be helpful in reducing sediment contamination throughout the Harbor. Recognizing that objective, it is important that the investigators work diligently to both provide the appropriate types of information to meet that goal, and to coordinate the efforts with the efforts of other investigators performing related work throughout the Harbor.

SCHEDULE

Although there are a number of uncertainties at the time of the submission of this Work Plan that make it difficult to establish a definitive schedule, a tentative schedule is presented below. This tentative schedule will be refined as input is obtained from the NJDEP, the SCRWG and the TTWG.

- Preparation of a QAPP for the toxics monitoring/loadings investigations for submission to NJDEP and SCRWG--Within two months of resource availability.
- Selection of CSO and SWO monitoring locations--Within two months of resource availability.
- Perform toxics monitoring/loadings investigations in NJHDG sanitary and storm sewer systems--Spring, 1999-Spring, 2000.
- Preparation of a QAPP for the toxics trackdown investigation for submission to NJDEP and TTWG--Summer, 1999.
- Perform toxics trackdown investigations for the POTWs, CSOs and SWOs under NJHDG's jurisdiction identified during the toxics monitoring/loadings investigation--Fall, 1999-Fall, 2001.
- Summarize data and provide the needed data to appropriate investigators--Within three months of the completion of the monitoring/loadings and trackdown investigations, independently.
- *Generate draft final and final reports--Concurrent with the previous task.*

NJHDG recognizes that the above schedule will undergo revisions as the program proceeds, and the Group is committed to keeping NJDEP and the appropriate HEP work groups informed of schedule changes if and when they take place.

BUDGET

This budget has been prepared for collecting samples at POTW's, CSOs and SWOs in the sewer districts under the jurisdiction of the New Jersey Harbor Dischargers Group (NJHDG) members. This budget has been generated at the request of NJDEP, considering input which was received at a modeling workshop held at the Hudson River Foundation in late July, 1998, and a series of subsequent meetings.

Based upon NJHDG's understanding of the request made by NJDEP, the following assumptions have been made in developing the budget for this work:

- All of the TOPS samplers needed to collect and process samples from the POTW's, CSOs and SWOs will be provided to NJHDG by NJDEP.
- There will be a separately-funded toxics trackdown effort for the New Jersey POTW, CSO and SWO locations found to be discharging sediment contaminants of concern in the toxics monitoring/loadings component of the program, for which NJHDG will have responsibility.

The locations of the POTW's to be sampled under the toxics monitoring/loadings component of this program are presented in Table 1. The actual CSO/SWO sampling locations will be determined based upon input from NJDEP and NJHDG members. The costs for performing the toxics monitoring/loadings component of the program based upon NJDEP's recommended monitoring approach are presented in Table 2.

It is difficult in advance to determine the precise level of effort that will be required to perform the toxics trackdown work outlined above, primarily because the number of discharges which contain meaningful quantities of sediment contaminants is unknown at the present time. However, NJHDG anticipates that \$1.5 - \$2.0 million will be made available to NJHDG from NJDEP beginning in January, 2000.

The effort that has been proposed above by NJHDG represents approximately three years of work that will be both labor and resource intensive. The majority of the work to be performed by NJHDG will be contracted by the Group to environmental organizations experienced with the types of services that are needed to perform the work outlined above.

TABLE 1

POTWS TO BE SAMPLED BY THE NEW JERSEY HARBOR
DISCHARGERS GROUP FOR THE HARBOR ESTUARY PROGRAM
CONTAMINANT ASSESSMENT AND REDUCTION PROGRAM

POTW	NUMBER OF SAMPLES TO BE COLLECTED
PASSAIC VALLEY SEWERAGE COMMISSION, NEWARK	4
EDGEWATER MUNICIPAL UTILITY AUTHORITY, EDGEWATER	3
JOINT MEETING OF ESSEX AND UNION COUNTIES, ELIZABETH	4
LINDEN ROSELLE SEWERAGE AUTHORITY, LINDEN	4
MIDDLESEX COUNTY UTILITY AUTHORITY, SAYERVILLE	4
NORTH BERGEN MUNICIPAL UTILITY AUTHORITY, NORTH BERGEN	3
RAHWAY VALLEY SEWERAGE AUTHORITY, RAHWAY	4
SECAUCUS MUNICIPAL UTILITY AUTHORITY, SECAUCUS	3
BERGEN COUNTY UTILITY AUTHORITY, LITTLE FERRY	4
NORTH HUDSON SEWERAGE AUTHORITY, NORTH HUDSON	3
HOBOKEN, HOBOKEN	3
TOTAL:	39

In addition, a total of 40 CSO/SWO samples will be collected and analyzed

TABLE 2

NEW JERSEY HARBOR DISCHARGERS GROUP BUDGET
FOR COLLECTING LOADINGS SAMPLES FOR
THE HARBOR ESTUARY PROGRAM
CONTAMINANT ASSESSMENT AND REDUCTION PROGRAM

PROGRAM PLANNING AND MEETINGS	\$ 30,000
SELECTING CSO/SWO SAMPLING LOCATIONS	\$ 18,000
POTW SAMPLE COLLECTION	\$ 60,000
CSO/SWO SAMPLE COLLECTION	\$ 75,000
SUPPLIES AND EQUIPMENT	\$ 20,000
DATA COLLECTION, SUMMARY AND EVALUATION	\$ 25,000
QUALITY ASSURANCE PROGRAM PLAN PREPARATION, COORDINATION WITH THE DATA MANAGEMENT CONTRACTOR, AND REPORT PREPARATION	\$ 20,000
SAMPLE SHIPMENT	\$ 7,000
PROGRAM MANAGEMENT AND HEP COORDINATION	\$ 20,000
TOTAL: ^a	\$275,000

^a NJHDG anticipates that an additional \$1.5-2.0 Million will be required to perform the toxics trackdown component of this investigation, for which NJHDG understands the Group will be funded in years 2-3 of the CARP program.

Client: New Jersey Harbor Dischargers Group

NJPDES	PI	FACNAME	FACADD1	FACADD2	FACCITY	FACSFACZIP	FACCOUNTY	REGION	PERMNAME
NJG0109240	47773	BAYONNE CITY OF	COMBINED SEWER SYSTEM	630 AVENUE C	BAYONNE	NJ 070020000	HUDSON	NORTHERN	CITY OF BAYONNE
NJG0108791	46106	CAMDEN COUNTY MUA	1645 FERRY AVE		CAMDEN	NJ 081041311	CAMDEN	SOUTHERN	CAMDEN CNTY MUA
NJG0108804	47747	CLIFFSIDE PARK BOROUGH OF	525 PALISADE AVE		CLIFFSIDE PARK	NJ 070102998	BERGEN	NORTHERN	CLIFFSIDE PARK BORO
NJG0117846	48435	BOROUGH OF EAST NEWARK	34 SHERMAN AVE		EAST NEWARK	NJ 070290000	HUDSON	NORTHERN	EAST NEWARK BORO
NJG0108740	46512	JOINT MEETING SEWAGE TREATMENT PLANT	500 S FIRST ST		ELIZABETH	NJ 072020000	UNION	CENTRAL	JOINT MEETING OF ESSEX & UNION COUNTIES
NJG0108782	46299	ELIZABETH CITY OF	50 WINFIELD SCOTT PLZ		ELIZABETH	NJ 072010000	UNION	CENTRAL	ELIZABETH CITY
NJG0034517	46357	BLUFF ROAD OUTFALL	PALISADE TERRACE OUTFALL	OLD PALISADE OUTFALL	FORT LEE	NJ 070240000	BERGEN	NORTHERN	FORT LEE BORO
NJG0108847	46392	GLOUCESTER CITY WWTP	CHARLES & WALNUT STS		GLOUCESTER CITY	NJ 080300000	CAMDEN	SOUTHERN	GLOUCESTER CITY
NJG0108715	47744	GUTTENBERG TOWN OF	70TH STREET & JFK BLVD		GUTTENBERG	NJ 070930000	HUDSON	NORTHERN	GUTTENBERG TOWN
NJG0108766	46414	HACKENSACK CITY OF	65 CENTRAL AVE		HACKENSACK	NJ 076020000	BERGEN	NORTHERN	HACKENSACK CITY
NJG0108871	47749	HARRISON TOWN OF	COMBINED SEWER SYSTEM	HAMILTON AVE	HARRISON	NJ 070290000	HUDSON	NORTHERN	HARRISON TOWN
NJG0108723	47745	JERSEY CITY MUN UTIL AUTH	555 RT 440		JERSEY CITY	NJ 073050000	HUDSON	NORTHERN	JERSEY CITY MUA
NJG0111244	47910	KEARNY TOWN	402 KEARNY AVE		KEARNY	NJ 070320000	HUDSON	NORTHERN	KEARNY TOWN
NJG0108707	46756	PASSAIC VALLEY SEWERAGE COMM	600 WILSON AVE		NEWARK	NJ 071050000	ESSEX	NORTHERN	PASSAIC VALLEY SEWERAGE COMMISSIONERS
NJG0108758	46675	NEWARK CITY OF	CITY HALL ROOM B31F	920 BROAD ST	NEWARK	NJ 071020000	ESSEX	NORTHERN	NEWARK CITY OF
NJG0108898	47751	NORTH BERGEN TOWNSHIP	COMBINED SEWER COLLECTION		NORTH BERGEN	NJ 070470000	HUDSON	NORTHERN	NORTH BERGEN TWP MUA
NJG0108880	47750	PATERSON CITY OF	COMBINED SEWER SYSTEM	CURTIS PLACE	PATERSON	NJ 075050000	PASSAIC	NORTHERN	PATERSON CITY
NJG0108812	47220	CAMDEN CITY OF	CITY HALL 4TH FLOOR		CAMDEN	NJ 081015120	CAMDEN	SOUTHERN	CAMDEN CITY
NJG0108731	46819	RAHWAY CITY	1 CITY HALL PLAZA		RAHWAY	NJ 070650000	UNION	CENTRAL	RAHWAY CITY
NJG0109118	47767	RIDGEFIELD PARK VILLAGE	234 MAIN ST		RIDGEFIELD PARK	NJ 076600000	BERGEN	NORTHERN	RIDGEFIELD PARK VILLAGE

946140019

Table of Contents

This permit package contains the items checked below:

[Place a capital letter "X" in the applicable boxes next to the item included in the permit package.]

Included

- | | |
|--|--|
| <input checked="checked" type="checkbox"/> | 1. Cover Letter |
| <input type="checkbox"/> | 2. Facility Submittals (Final permits only) |
| <input checked="checked" type="checkbox"/> | 3. Adjudicatory Hearing Request Checklist and Tracking Form For Individual NJPDES Permits (If Appropriate, Final Permits Only) |
| <input checked="checked" type="checkbox"/> | 4. Stay Request and Tracking Form (If Appropriate, Final Permits Only) |
| <input checked="checked" type="checkbox"/> | 5. Table of Contents |
| <input type="checkbox"/> | 6. Public Notice (Draft permits for major facilities only) |
| <input checked="checked" type="checkbox"/> | 7. Response to Comments (If Appropriate, Final Permits Only) |
| <input checked="checked" type="checkbox"/> | 8. NJPDES Permit Authorization Page |
| <input type="checkbox"/> | 9. Fact Sheet / Statement of Basis (Draft permits only) |
| <input checked="checked" type="checkbox"/> | 10. Part I – NARRATIVE REQUIREMENTS Combined Sewer Systems (GP) |
| <input type="checkbox"/> | 11. Part II – General Requirements: Discharge Categories |
| <input type="checkbox"/> | 12. Part III – Limits and Monitoring Requirements |
| <input type="checkbox"/> | 13. Part IV – Specific Requirements: Narrative |
| <input checked="checked" type="checkbox"/> | 14. APPENDIX A: CONTENTS OF A PUBLIC PARTICIPATION WORK PLAN |
| <input checked="checked" type="checkbox"/> | 15. APPENDIX B: DISINFECTION TECHNOLOGIES |
| <input checked="checked" type="checkbox"/> | 16. APPENDIX C: MINIMUM CONTROL MEASURES FOR COMBINED SEWER COLLECTION AND CONVEYANCE SYSTEMS |
| <input checked="checked" type="checkbox"/> | 17. APPENDIX D: MINIMUM CONTROL MEASURES FOR COMBINED SEWER COLLECTION AND CONVEYANCE SYSTEMS AND COMBINED SEWER OVERFLOW CONTROL FACILITIES |

- ☒ 18. APPENDIX E: COST AND PERFORMANCE ANALYSIS REPORT
- ☒ 19. REQUEST FOR AUTHORIZATION INSTRUCTIONS
- ☒ 20. REQUEST FOR AUTHORIZATION

**Division of Water Quality
Municipal Finance and Construction Element
PO BOX 425
Trenton, NJ 08625-0425**

CERTIFIED RETURN MAIL RECEIPT REQUEST:

June 30, 2004

SUBJECT: New Jersey Pollutant Discharge Elimination System
NJPDES Permit No. NJ0105023
General Permit for Combined Sewer Systems
Permit Revocation and Reissuance

Dear Mr.

Enclosed is the final revoked and reissued New Jersey Pollutant Discharge Elimination System (NJPDES) General Permit NJ0105023 for Combined Sewer Systems with the Response to Comments Document as required by N.J.A.C. 7:14A-15.16. The General Permit No. NJ0105023 is issued on June 30, 2004, has an Effective Date of August 1, 2004 and will expire on July 31, 2009. This general permit has been issued in accordance with the provision of N.J.A.C. 7:14A.

The Department has revoked and reissued the existing General Permit for Combined Sewer Systems with the addition of new provisions. The permit's previous requirements and compliance schedules will continue to remain in effect without any change. The new permit requirements incorporate certain additional provisions concerning the development of CSO Long-term Control Plans (LTCPs) as required by the National CSO Control Policy. Specifically, the Department has modified the General Permit by adding new provisions that requires owners and/or operators of combined sewer systems to develop and evaluate alternative control measures for the control of pathogens and to formulate cost and performance relationships.

Within thirty (30) calendar days following your receipt of this general permit, under N.J.A.C. 7:14A-17.2, a permittee or a person who seeks and qualifies to be a party to the action pursuant to N.J.A.C. 7:14A-17.3, may submit a written request for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-17.2 (a) through (f).

946140022

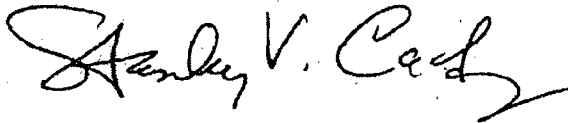
The request should be made to:

Gautam R. Patel, Chief
Bureau of Financing and Construction Permits
PO Box 425
Trenton, NJ 08625-0425

Additionally, the request for an adjudicatory hearing must contain a completed, signed and dated "Administrative Hearing Request Checklist and Tracking Form for Permits" (form attached). The original forms shall be submitted to the Office of Legal Affairs and two copies submitted to the Division of Water Quality at the addresses listed on the attached form.

If you have any questions concerning the revocation and reissuance of the permit, please contact S. Dan Zeppenfeld, PE, PP, Bureau of Financing and Construction Permits at (609) 292-5563.

Sincerely,

A handwritten signature in black ink, appearing to read "Stanley V. Cach Jr.", with a stylized flourish at the end.

Stanley V. Cach Jr. PE, PP, Assistant Director
Division of Water Quality

ENCLOSURES

General Permit for Combined Sewer Systems and attachments
Request For Authorization and Instructions
Notice to Permittees of Final Permit Decision
Administrative Hearing Request Checklist and Tracking Form for Permits

946140023



NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0105023

Final: Surface Water Master General Permit Revoke & Reissue

Permittee:

GENERAL PERMIT-
CATEGORY CSO
PER INDIVIDUAL
NOTICE OF AUTHORIZATION

Co-Permittee:

Property Owner:

GENERAL PERMIT
CATEGORY CSO
PER INDIVIDUAL
NOTICE OF AUTHORIZATION

Location Of Activity:

GENERAL PERMIT-
CATEGORY CSO
PER INDIVIDUAL
NOTICE OF AUTHORIZATION

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
CSO -Combined Sewer Overflow (GP)	6/30/04	8/1/04	7/31/09

By Authority of:
Commissioner's Office

DEP AUTHORIZATION

Stanley V. Cach, P.E., P.P., Assistant Director
Municipal Finance & Construction Element
Division of Water Quality

(Terms, conditions and provisions attached hereto)

Division of Water Quality

PART I

NARRATIVE REQUIREMENTS

Combined Sewer Systems (GP)

A. AUTHORIZATION UNDER THIS PERMIT

1. Permit Area

- a. This permit applies to all areas of the State of New Jersey.

2. Eligibility & Scope

- a. This permit may authorize all existing combined sewer systems and combined sewer overflow points specifically identified or described in the individual authorizations.

3. Definitions

- a. As used in this permit, the following words and terms shall have the following meanings:
 - i. "Combined Sewer Collection and Conveyance System" means any portion of a Combined Sewer System excluding the Combined Sewer Overflow Control Facilities.
 - ii. "Combined Sewer Overflow" (CSO) means the excess flow from the combined sewer system which is not conveyed to the Domestic Treatment Works for treatment, but transmitted by pipe or other channel directly to the waters of the State.
 - iii. "Combined Sewer Overflow Control Facilities" means any portion of the combined sewer system beginning from and including the point at which flows are diverted within the collection and conveyance system from proceeding to the treatment facility and ending at the CSO Point where the CSO is directed to the receiving waters. These portions of the combined sewer system include, but are not limited to, the regulator the outfall structure, tide gate, and other appurtenances.
 - iv. "Combined Sewer Overflow Point" (CSO Point) means a discrete point in a combined sewer system which provides for the release of combined sewer overflows (See N.J.A.C. 7:22A-1.4).
 - v. "Combined Sewer System" means a sewer system that is designed to carry sanitary sewage at all times and that also is designed to collect and transport storm water from streets and other sources, thus serving a combined purpose (See N.J.A.C. 7:14-1.2).
 - vi. "Domestic Treatment Works" (DTW) means all publicly owned treatment works as well as any privately owned treatment works processing primarily domestic wastewater and pollutants together with any ground water, surface water, stormwater or process wastewater that may be present (See N.J.A.C. 7:14A:1.2).
 - vii. "Domestic Wastewater" means the liquid waste or liquid borne wastes discharged into a domestic treatment works (See N.J.A.C. 7:14A-1.2).

- viii. "Dry Weather Overflow" (DWO) means a type of combined sewer overflow which is not the direct result of an increase in wastewater flows due to events of precipitation including floods, storm events, and prolonged snow melts. Dry weather overflows are events of noncompliance which may be caused by operator error, improperly designed facilities, illegal discharges or connections to the facilities, the lack of preventive maintenance, careless or improper or due to unforeseen conditions caused by clogged regulators, mechanical and structural failures, excessive infiltration, etc.
- ix. "Facility" means any component or appurtenance of any sanitary or stormwater sewer system (See N.J.A.C. 7:22A-1.4).
- x. "Sanitary Sewer System" means a network of pipes, conduit or other physical facilities used to carry wastewater to a wastewater treatment facility. A sanitary sewer system shall not include a system which carries only stormwater (See N.J.A.C. 7:22A-1.4).
- xi. "Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage (See N.J.A.C. 7:14A-1.9).
- xii. "Stormwater Sewer System" means the designed features within a municipality which collect, convey, channel, hold, inhibit or divert the movement of stormwater (See N.J.A.C. 7:22A-1.4).
- xiii. "Solids/Floatables" means any wastes or debris floating, suspended or otherwise contained in wastewater capable of being discharged to waters of the State (See N.J.A.C. 7:14A-1.2).
- xiv. "Treatment Works" means any device or system whether public or private, used in the storage, treatment, recycling, or reclamation of municipal or industrial waste of a liquid nature including intercepting sewers, outfall sewers, sewage collection systems, cooling towers and ponds, pumping, power and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any other works including sites for the treatment process or for the ultimate disposal of residues resulting from such treatment. Additionally, "treatment works" means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of pollutants, including storm water runoff, or industrial waste in combined or separate storm water and sanitary sewer systems (See N.J.A.C. 7:14A-1.2).
- xv. "Wastewater" means residential, commercial, industrial, or agricultural liquid waste, septage, stormwater runoff or any combination thereof or other residue discharged or collected into a sanitary or storm water sewer system, or any combination thereof (See N.J.A.C. 7:22A-1.4).

4. Requiring an Individual Permit or Another General Permit

- a. The Department may require any permittee authorized under this permit to apply for and obtain an Individual Discharge to Surface Water (DSW) permit, or seek and obtain authorization under another general permit. Conversely, any permittee authorized under this permit may request to be excluded from authorization under this permit by applying for an individual DSW permit. However, an individual permit may include more stringent requirements based on site specific conditions. Termination of existing permits under such circumstances is governed by N.J.A.C. 7:14A-6.13.
- b. If, after receiving authorization under this permit, a permittee is required by the Department to obtain another NJPDES DSW permit that would also cover the authorized facility, then authorization under this permit shall remain in effect only until either:
 - i. The date such other permit effective; or

- ii. The date the application for such other permit (or request for authorization under another general permit) is denied, or as otherwise specified by the Department.
- c. If such a permittee fails to submit a complete application or request for authorization by the date specified by the Department, then the general permit authorization remains in effect only until that date, unless otherwise specified by the Department.

5. Authorization

- a. In order to obtain authorization under this permit, a complete Request for Authorization (RFA) shall be submitted in accordance with the requirements of Subpart IB of this permit unless the provisions of paragraph 5.C, below, apply. Upon review of the RFA, the Department may, in accordance with N.J.A.C. 7:14A-6.13, do one of the following:
 - i. Issue notification of Authorization under this permit, in which case authorization is deemed effective as of the date the complete RFA is received by the Department;
 - ii. Deny authorization under this permit and require submittal of an application for an individual DSW permit; or
 - iii. Deny authorization under this permit and require submittal of an RFA for another general permit.
- b. For combined sewer overflows authorized by this permit, the permittee is exempt from the provision in N.J.A.C. 7:14A-6.2 which states that the discharge of any pollutant not specifically regulated in the NJPDES permit or listed in the NJPDES application shall constitute a violation of the permit.
- c. Existing authorizations will be renewed automatically when the general permit is issued or reissued. The most recently submitted request for authorization will be considered a timely and complete request for authorization under the reissued permit. The automatic renewal of authorization is applicable only for any permittees who had authorization under the permit immediately prior to the effective date of the reissued permit.
- d. The Department shall issue a notice of renewed authorization to eligible permittees. If a permittee is aware that any information in the most recently submitted request for authorization is no longer true accurate, and /or complete, the permittee shall provide the correct information to the Department within 90-days after the effective date of the permit.

B. REQUEST FOR AUTHORIZATION REQUIREMENTS

1. Deadlines for Requesting Authorization

- a. A Request for Authorization (RFA) for a facility must be submitted prior to EDP.
- b. The Department may, at its discretion, accept an RFA submitted after the foregoing deadline, however, the permittee may still be held liable for any violations that occurred prior to the effective date of the authorization.

2. Persons Requesting Authorization

- a. An RFA may be submitted by any person who currently owns and/or operates part of a combined sewer system. An RFA may be jointly submitted by all persons who currently own and/or operate any part of a combined sewer system.

3. Contents of the Request for Authorization: A completed RFA shall include all of the following information regarding the regulated facility using the Department's RFA form (additional sheets may be attached as required):

- a. The name of the facilities owned and/or operated by the applicant which require the applicant to obtain this General Permit.
- b. The name, mailing address, location of the facility for which the application is submitted;
- c. The EPA identification number of the facility (if assigned);
- d. The four (4) digit Standard Industrial Classification (SIC) Code or North American Industrial Classification System (NAICS) code equivalent and corresponding short title assigned to the facility by the New Jersey Department of Labor. Use 4592- "Sewerage Systems" for any portion of a combined sewer system. If the facility is exempt from Department of Labor SIC code assignment procedures, then use the four (4) digit SIC code and short title that best represents the applicant's facility/activity;
- e. The legal name, address, and business telephone number of all current owners and operators, and, if applicable, their authorized agents and engineers. The RFA shall also identify whether each person named is an owner and/or operator, and whether the owner is a Federal, State, or public agency, or is a private entity;
- f. The name of the domestic treatment works to which is conveyed and treated;
- g. The name of the Water Quality Management Planning Agency (See N.J.A.C. 7:15-1.5), the government unit, or other person has "wastewater management plan responsibility", as defined in N.J.A.C. 7:15-5.3(b);
- h. A listing of all permits or construction approvals received or applied for by the applicant at the site under any of the following programs;
 - i. Hazardous Waste Management program under RCRA;
 - ii. NJPDES permits or treatment works approvals under the State of New Jersey's Water Pollution Control Act or construct and operate permits;
 - iii. Prevention of Significant Deterioration (PSD) Program under the Clean Air Act;
 - iv. No-attainment program under the Clean Air Act;
 - v. National Emission Standards for Hazardous Pollutants (NESHAPS) pre-construction approval under the Clean Air Act;
 - vi. Ocean dumping permits under the Marine Protection Research and Sanctuaries Act;
 - vii. Dredge or fill permits under Section 404 of the Federal Act; and
 - viii. Other relevant environmental permits, including Federal permits.
- i. Identification of administrative orders, administrative consent orders, judicial orders, judicial consent orders, notices of violations, complaints filed, or other corrective or enforcement action(s) required by any governmental agencies with regard to the operation of the applicant at that site concerning pollution with the previous five years;
- j. For each combined sewer overflow point (CSO Point) provide the following:

- i. A schematic diagram showing the configuration of the combined sewer overflow control facilities associated with each CSO Point to the combined sewer system and the combined sewer collection and conveyance system. This diagram should show the relationships of the CSO Point to portion of the combined sewer overflow control facility where the wastewater is diverted from the combined sewer overflow collection and conveyance facilities (i.e., the location of the regulator or other diversion structure), and the CSO Point at which the wastewater is discharged into the receiving water body (i.e., the end of the outfall structure).
 - ii. Using Form A: SCHEDULE OF COMBINED SEWER OVERFLOW POINTS, provide the following information:
 - i) The discharge serial number (a three-digit number beginning with 001 for the CSO Point, consecutively assigned to each CSO Point);
 - ii) The CSO Point name;
 - iii) The latitude and longitude of CSO Point (end of pipe), accurate to the nearest second;
 - iv) The name of the receiving waterbody; and
 - v) A description of any treatment received by the CSO prior to discharge;
 - k. The Federal tax identification number of the owner;
 - l. A copy of the U.S. Geological Survey Topographic Map, 7.5 minute quadrangle series (SCALE 1:24,000), showing the location of the facility (ies) and the name of the quadrangle(s). The applicant shall indicate on the map the facilities and/or activities, that authorization under this general permit is being requested, as follows: the delineation of the service area of the collection systems; the alignment of conveyance systems (interceptors, force mains, trunk sewers, etc.); and/or the location and/or alignment of combined sewer overflow control facilities (regulators) and the corresponding combined sewer overflow points (i.e. ends of outfalls and/or other discharge structures);
 - m. A brief narrative description of the facility(ies), collection system, combined sewer overflow point, or combined sewer overflow control facility, as applicable;
 - n. The RFA certification contained in Attachment A;
 - o. A photocopy of the publication of the public notice required under B.5, below (the name and date of the publication and the section and page the public notice was printed in shall be indicated); and
 - p. Any additional information that may be required by the Department to be included as part of the RFA if the Department determines that such additional information (including, but not limited to data, reports, specifications, plans, permits, or other information) is reasonably necessary to determine whether to authorize the discharge under this permit.
- 4. Where to submit**
- a. A completed and signed RFA shall be submitted to the Department at the address specified on the Department's RFA form.
- 5. Additional Notification**

- a. The permittee shall publish a notice in a daily or weekly newspaper within the area affected by the permitted facility stating that a request for authorization under General Permit No. NJ0105023 for Combined Sewer Systems has been submitted in accordance with N.J.A.C. 7:14A-6.13(d). This notice shall also identify the General Permit under which Authorization is sought, the legal name and address of the owner and operator, the facility name and address, and the type of facility and discharges, and the receiving waters. A certification stating that arrangements for such notification have been made is contained in Attachment A and shall be signed and submitted as part of the RFA.

6. Reauthorization

- a. As stated on the cover page, this permit expires in five years from the effective date of the permit. If a CSO authorized by this permit will continue after the expiration of this permit, the permittee is required to submit a RFA within 180 days before the expiration date of this permit.

C. Discharge Limitations

1. (Reserved)

2. Dry Weather Overflows

- a. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Points and Combined Sewer Overflow Control Facilities.
- b. Dry weather overflows are prohibited.
- c. Reporting Requirements
 - i. The permittee shall report all dry weather overflows (DWO) as defined in A.3. of this permit.
 - ii. The permittee shall, within 24 hours after the commencement of the DWO or of the permittee becoming aware of the DWO, verbally communicate the following information to the Department via the DEP Hotline at 1-877-927-6337:
 - (A) A description of the discharge, including the time of the discharge the location of the discharge, the designated name and the three-digit discharge serial number (See I. B.3.J. of this permit, the estimated volumetric flow rate of the discharge, a description of the nature of the discharge as:
 - (1) "a dry weather overflow of wastewater from a combined sewer system" or, as
 - (2) "a dry weather overflow of wastewater from a combined sewer system which is (or "may be") contaminated with (insert the identity of the suspected contaminant/pollutant, or describe the source of the additional and unusual contamination/pollutant, and the name of the receiving waterbody).
 - (B) The duration of the discharge, including the dates and times, and, if the reason for the discharge has not been corrected, the anticipated time when the permittee will return the discharge into compliance;
 - (C) The cause of the discharge;
 - (D) Steps the permittee will take to determine the cause of the discharge;
 - (E) Steps the permittee is taking to reduce and eliminate the non complying discharge; and
 - (F) Steps the permittee is taking to reduce, eliminate, and prevent reoccurrence of the discharge.

- iii. The permittee shall, within five (5) business days, Saturdays, Sundays, and state and federal holidays excepted, after the commencement of a DWO or of the permittee becoming aware of a DWO, submit written documentation, to the person identified in vii below, including properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge event, and including all of the information listed below. The Department must receive the information listed under items i through vi below within the five (5) day period in order for the permittee to meet this requirement. If the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information required in ii, above, the permittee shall immediately submit such facts or information to the Department. The written information to be submitted includes the following:
- (A) All the information required by ii above;
 - (B) All properly signed, contemporaneous operating logs, or other relevant evidence, on the circumstances of the discharge;
 - (C) Reasons that the DWO occurred including the cause of the DWO;
 - (D) Evidence that the permittee was properly operating facility at the time of the discharge;
 - (E) Evidence that the permittee submitted notice of the DWO as required pursuant to iii., above, or in the case of a DWO resulting from the performance by the permittee of maintenance operations, evidence the permittee provided prior notice and received prior written approval therefor from the Department including the name, title, address, and telephone number of the individual who satisfied this requirement, the date and specific time the individual notified the Department, and the name and title of the individual within the Department to which the permittee gave such notice; and
 - (F) Evidence that the permittee complied with all remedial measures the Department required.
- iv. For any DWO or other CSO which causes injury to persons, or damage to the environment or which could constitute a threat to human health or the environment, the permittee shall comply with the following reporting requirements of v, vi, and vii, below.
- v. The permittee shall, within two hours after the commencement of the discharge or of the permittee becoming aware of the discharge, verbally communicate the following information to the Department via the DEP Hotline at 1-877-927-6337:
- (A) A description of the discharge, including the time of the discharge, the location of the discharge (provide the designated discharge point name and three-digit serial number), the estimated volume of the discharge, a description of the nature of the discharge as (1) "a dry weather overflow of wastewater from a combined sewer system which is (or "may be") contaminated with (insert the identity of the suspected contaminant/pollutant, or describe the source of additional and unusual contamination/pollutant), and the name of the receiving waterbody;
 - (B) Steps the permittee will take to determine the cause of the permit noncompliance; and
 - (C) Steps the permittee will take to reduce and eliminate the noncomplying discharge.

- vi. The permittee shall, within 24 hours after the commencement of the discharge or of the permittee becoming aware of the discharge, verbally communicate the following information to the Department via the DEP Hotline 1-877-927-6337:
 - (A) The duration of the discharge, including the exact dates and times, and if the noncompliance has not been corrected, the anticipated time when the permittee will return the discharge to compliance;
 - (B) The cause of the noncompliance;
 - (C) Steps the permittee is taking to reduce, eliminate, and prevent reoccurrence of the non complying discharge;
 - (D) An estimate of the threat to human health or the environment posed by the discharge;
 - (E) The measures the permittee taken or is taking to remediate the problem and any damage or injury to human health or the environment and to avoid a repetition of the problem; and
 - (F) Any revisions to the information required by vi.(A) above.
- vii. The permittee shall, within five (5) business days, Saturdays, Sundays, and state and federal holidays excepted, after the commencement of the discharge or of the permittee becoming aware of the discharge, submit in writing to the person in vii., below all of the information required in vi.(A) and vi.(B), above, if the permittee had not previously submitted the information in writing to the Department. The Department must receive the information required by the proceeding paragraph within the five (5) day period in order for the permittee to meet this requirement. If the Permittee becomes aware that it has failed to submit any relevant facts or submitted incorrect information required in vi.(A) and vi.(B), above, the permittee shall immediately submit such facts or information to the Department.
- viii. The permittee shall submit the written notice required pursuant to iii and iv above to:
Administrator
Water Compliance & Enforcement Element
New Jersey Department of Environmental Protection
P O Box 422
Trenton, New Jersey 08625-0422

3. Intrusion of Surface Waters

- a. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Control Facilities.
- b. The permittee shall prevent the intrusion of the receiving waters into the combined sewer collection and conveyance system past the combined sewer overflow control facilities. Such protection shall be provided against the intrusion of all receiving waters below the flood elevation. For the purposes of this section the flood elevation shall be one-foot above the 100 year fluvial flood elevation or the 100 year tidal elevation, which ever is greater (See N.J.A.C. 7:13).

4. Solids/Floatables

- a. Interim Solids/Floatables Control Measures
 - i. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Points.

- ii. On or before March 1, 1996, the permittee shall submit to Bureau of Engineering North, Municipal Finance & Construction Element, within the Division of Water Quality, an Interim Solids/Floatables Control Measures Plan for each CSO Point. The permittee, when developing and evaluating control measures to meet this requirement, shall, at a minimum, evaluate the implementation of each of the Screening and Skimming Control Measures listed in 4.a.v.(i) and (ii), below, for each CSO Point. If the permittee demonstrates, to the satisfaction of the Department, that there are no feasible Interim Solids/Floatables Control Measures that can be economically justified for a specific CSO Point, the permittee shall immediately initiate the development and implementation Long-term Solids/Floatables Control Measure(s) required in 4.b., below, for that CSO Point.
- iii. Within sixty (60) days of the permittee's receipt of the Department's written comments on the plan, the permittee shall submit revised plans that include the modifications required in the Department's comments.
- iv. Within twelve (12) months of the permittee's receipt of the Department's written approval of the permittee's Interim Solids/Floatables Control Measures Plan, the permittee shall implement the approved Interim Solids/Floatables Control Measures, unless paragraph C.4.a.x. applies.
- v. The conceptual plan shall fully document the evaluation of the Interim Solids/Floatables Control Measures in accordance with 4.a.vii., below. Control Measures which, as a minimum, must be evaluated include the following:
 - (A) Screening Technologies - Screening Technologies involve the screening of Solids/Floatables materials from combined sewer overflows. Control measures under this category include, but not limited to, baffles, trash racks, static screens, end of pipe netting, and mechanical screens. Implementation of a screening technology that complies with the same performance criteria specified under item 4.b.ii. below shall be given priority for consideration. If it is determined that the use of the 0.5 inch bar screen is not feasible, the permittee shall evaluate alternative grid or bar screen sizes.
 - (B) Skimming Technologies- Skimming Technologies skim Solids/Floatables materials from the receiving water body surface. Alternatives within this category include, but not limited to, the placement of booms around an outfall or groups of outfalls, skimming open water areas with "skimming boats", and flow balance method (FBI) containment. Skimming control measures must be designed to prevent the transport of Solids/Floatables materials in the receiving water.
- vi. All Solids/Floatables materials removed from the combined sewer overflow which are not conveyed to the DTW must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities.
- vii. The methodology used in developing, evaluating, selecting, and implementing each Interim Solids/Floatables Control Measure and the reasons why a particular control measure was determined to be inappropriate to utilize for a CSO Point shall be documented. The documentation shall be submitted with the conceptual plan required in C4.a.ii., above, and incorporated into the CSOPPP. The documentation of the evaluation process to be submitted with the conceptual plan, required in 4.a.ii. above, shall include:
 - (A) A list and description of alternatives that were considered;
 - (B) A list and description of the alternatives selected as the final plan for Interim Solids/Floatables Control measures;
 - (C) A summary of the alternatives considered, but rejected, and the basis for rejecting them;
 - (D) The construction/implementation cost estimates, operation, and maintenance costs; and
 - (E) An estimate of the anticipated decrease in Solids/Floatables for each control measure at each CSO Point.

- viii. The approved Interim Solids/Floatables Control Measure(s) shall be implemented, operated, and/or maintained until the Long-term Solids/Floatables Control Measures, required under item 4.b.ii.; below, are in operation, unless otherwise directed by the Department.
 - ix. Unless paragraph C.4.a.x. applies, within twelve (12) months after the permittee's receipt of the Department's approval of the Interim Solids/Floatables Control Measures Plan, the permittee shall submit to the Municipal Finance & Construction Element, within the Division of Water Quality, a properly executed Interim Solids/Floatables Control Measures Implementation Certification, provided in Attachment F, indicating the permittee's compliance status with the Interim Solids/Floatables Control Measures required in C.4.a. The Certification provided in Attachment F shall be properly executed, and submitted with a completed FORM B, "INTERIM SOLIDS/FLOATABLE CONTROL MEASURE IMPLEMENTATION CERTIFICATION SCHEDULE", listing all CSO Points owned and/or operated by the permittee, describing the type of Interim Solids/Floatables Control Measure implemented for each CSO Point, and indicating the date each control measure was placed into service.
 - x. The Department's approval of the permittee's Interim Solids/Floatables Control Measures Plan shall state whether a Treatment Works Approval (TWA) application is necessary. If, pursuant to N.J.A.C. 7:14A-22.1, the implementation of the permittee's Interim Solids/Floatables Control Measures Plan requires a TWA application, then unless otherwise directed by the Department, the permittee shall comply with the following schedule:
 - (A) Within sixty (60) days of the permittee's receipt of the Department's written conceptual approval of the permittee's Interim/ Solids Floatables Control Measures Plan, the permittee shall submit an administratively complete Stage II/III TWA application (see N.J.A.C. 7:14A-22.8 and 7:14A-22.10) to Bureau of Administration and Management, within the Division of Water Quality.
 - (B) Within twelve (12) months of the permittee's receipt of the Department's Stage II/III TWA, unless otherwise directed by the Department, the permittee shall complete construction and commence operation of the control measures in the approved Interim Solids/Floatables Control Measures Plan.
- b. Long-term Solids/Floatables Control Measures
- i. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Points.
 - ii. In accordance with the schedule provided in 4.b.v., below, the permittee shall implement control measures which will capture and remove Solids/Floatables which cannot pass through a bar screen having a bar spacing of a 0.5 inches (13.0 mm) from all CSOs, unless the permittee can demonstrate, to the satisfaction of the Department, in accordance with 4.b.iii., below, that an alternative control measure is more appropriate for a CSO Point.

- iii. The permittee may petition the Department for use of an alternative control measure by demonstrating, to the satisfaction of the Department, the appropriateness of the permittee's proposed alternative control measure as follows:
 - (A) The permittee shall submit, to the Department, a cost/performance analysis. This cost/performance analysis shall:
 - (1) evaluate the cost of implementing control measures to meet the requirements of C.4.b.ii.;
 - (2) evaluate the cost of implementing the permittee's proposed alternative control measure(s) and the resultant Solids/Floatables reduction; and
 - (3) demonstrate that the cost of implementing control measures to meet the requirements of C.4.b.ii. increases disproportionately and only provides a marginal increase in Solids/Floatables reduction over that of the proposed alternative control measure(s); and
 - (B) The permittee shall also perform and submit a separate analysis which demonstrates that the permittee's alternative control measure is designed to capture and remove objectionable Solids/Floatables, such as medical wastes including tampons applicators, syringes, condoms, vials, etc. from each CSO Point.
- iv. All Solids/Floatables materials removed from the CSO which are not conveyed to the DTW must be disposed of properly at a permitted solid waste facility authorized to accept grit and screening materials from wastewater treatment facilities. The reduction of the size of Solids/Floatables materials in the CSO prior to the discharge to the waters of the State to achieve compliance with this permit is not permitted.
- v. The permittee shall plan, design, construct, operate and/or implement Long-term Solids/Floatables Control Measures in accordance with the following schedule:
 - (A) Submit an approvable Long-term Solids/Floatables Control Measures Plan to the Department, on or before March 1, 1996;
 - (B) The permittee shall within sixty (60) days of the permittee's receipt of the Department's written comments on the permittee's Long-term Solids/Floatables Control Measures Plan modify that submission pursuant the Department's written comments and resubmit it for the Department's approval;
 - (C) Within twelve (12) months of the permittee's receipt of the Department's written conceptual approval of its Long-term Solids/Floatables Control Measures Plan, the permittee, unless otherwise directed by the Department, shall submit an administratively complete Stage II/III TWA application in accordance with N.J.A.C. 7:14A-22.8 and 7:14A-22-10 to the Bureau of Administration and Management, within the Division of Water Quality;
 - (D) With in fifteen (15) months of the permittee's receipt of Department's Stage II/III TWA, the permittee shall complete construction and commence operation of the approved Long-term Solids/Floatables Control Measures, unless otherwise directed by the Department.
- vi. The conceptual plan required in C.4.b.v.(A). shall, as a minimum, contain a site plan, showing all existing and proposed facilities, a project schedule for design, and construction/implementation, and a description and schedule for obtaining all federal, state, regional and/or local agency approvals. The selected plan will describe all institutional arrangements which are necessary to implement the selected plan, as well as, identify the owner and operator of all proposed facilities.
- vii. All studies associated with the planning, design, and construction/implementation including the implementation schedule of the Long-term Solids/Floatables Control Measures, shall be incorporated into the CSOPPP.

- viii. The permittee shall submit the conceptual plans and supporting documentation required pursuant to C.4.a.ii,iii,v & vii and C.4.b.v.(A) & (B) & vi, and, if applicable, any petition for an alternative control measure as allowed under C.4.b.iii, above, to:
Municipal Finance & Construction Element
New Jersey Department of Environmental Protection
P O Box 425
Trenton, New Jersey 08625-0425
- ix. The permittee shall submit applications for Treatment Works Approvals required in C.4.a.x.(A) and C.4.b.v.(C), above, to:
Bureau of Administration and Management
New Jersey Department of Environmental Protection
P O Box 425
Trenton, New Jersey 08625-0425

5. Proper Operation and Maintenance Programs

- a. Applicability: This section is applicable to all permittees.
- b. On or before March 1, 1996, the permittee shall develop, maintain as current, and implement a proper operation and maintenance program that will meet the requirements of the permit and will maintain in good working order and will operate as effectively as possible all treatment works, facilities, and systems of treatment and control for collection and treatment that are installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of the permit (See N.J.A.C. 7:14A-6.12).
- c. The permittee shall develop O&M Plan and Manual(s), that support the implementation of the proper operation and maintenance program, as required in this subpart, in accordance with the schedule contained in item 2, above, and that demonstrates that the permittee has made or shall make the necessary financial, administrative, and institutional arrangements to meet the requirements of the permit. An O&M Plan and Manual(s) shall contain the following elements structured to address the type of facility regulated by the general permit authorization, including, but not limited to: an Annual Budget Analysis; a Financial Management System; Staffing and Training; an Emergency Operations Program, including a System Vulnerability Analysis and Emergency Operations Program; Administrative Functions; and Operation and Maintenance Manual(s).
- d. The Proper Operation and Maintenance Plan and Manual(s) shall be incorporated into the CSOPPP.

6. Maximization of the Conveyance of Wastewater to the DTW for Treatment

- a. Applicability: This section is applicable to all permittees.
- b. The permittee shall operate and maintain the facilities to maximize the conveyance of wastewater to the DTW for treatment and to minimize the frequency and duration of CSOs to the receiving waters.
- c. On or before March 1, 1996, the permittee shall develop a Facility Inventory and Assessment Analysis (FIAA) and incorporate the FIAA into the CSOPPP. The FIAA must contain an inventory and engineering assessment of all facilities owned and/or operated by the permittee and authorized under the permit. The FIAA must, at a minimum, contain the following:

- i. A sewer service area map delineating existing facilities. This map shall:
 - (A) Delineate the service area of each catchment area of the collection and conveyance system;
 - (B) Show the collection and conveyance system detailing the size, types, and shapes of all pipes and appurtenances;
 - (C) Indicate the identity and location of each existing pumping station;
 - (D) Show the location, size, type, and shape of all interceptor sewers and trunk sewers;
 - (E) Show the location and identity of each regulator and CSO Point;
 - (F) Show all point source discharges to receiving waters associated with the combined sewer system; and
 - (G) Delineate all areas served by separate stormwater sewer systems or separate sanitary sewer systems, and the location of where, if at all, these systems connect into and contribute wastewater to the combined sewer system.
 - ii. An inventory and engineering assessment of the operational status and mechanical and structural integrity of the major components of the combined sewer system. This assessment shall be both a narrative and graphical descriptions addressing size, shape, hydraulic capacity, including, but not limited to, the combined sewer overflow control facilities, pumping stations, interceptors, and force mains, etc. The hydraulic performance capability of each component shall be determined.
- d. The permittee shall incorporate the FIAA into the CSOPPP and shall maintain the FIAA as current and applicable for the life of the permit.

D. MONITORING AND REPORTING REQUIREMENTS

1. Monitoring Requirements

- a. Annual Inspections
 - i. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Control Facilities.
 - ii. The permittee shall conduct an annual inspection of all combined sewer overflow control facilities owned and/or operated by the permittee. The permittee shall inspect and prepare an engineering assessment of the mechanical and structural integrity and operability of each portion of the combined sewer overflow control facilities including the identification of any recommended rehabilitation measures or correction actions necessary to bring the facilities into compliance with the provisions of C.6. "Maximization of Conveyance of Wastewater to DTW for Treatment". The permittee shall document the evaluation process, the findings of the inspections, the conclusions, and recommendations of the engineering assessment and incorporate this documentation into the CSOPPP.

2. Reporting Requirements

- a. Annual Certifications and Reports of Noncompliance
 - i. Applicability: This section is applicable to all permittees.
 - ii. The permittee shall submit an Annual Permit Compliance Certification (See Attachment C to this permit for the form of these certifications) that the facility is in compliance with the terms of this permit and the Combined Sewer Overflow Pollution Prevention Plan (CSOPPP), as specified in E.1., except that if there are any incidents of noncompliance, those incidents shall be identified in a separate report of noncompliance transmitted with the annual certifications. The annual certifications, and, if applicable, the reports of noncompliance, shall be submitted in accordance with the procedure specified in v., below.

- iii. If there are any incidents of noncompliance with this permit and/or the CSOPPP, the permittee shall, in a separate report of noncompliance, identify the incident(s) of noncompliance and the steps being taken to remedy the noncompliance and prevent such incidents from recurring (See N.J.A.C. 7:14A-6.10).
 - iv. The certifications and reports of noncompliance, if applicable, shall be signed by the permittee and submitted to the Department with the executed ANNUAL PERMIT COMPLIANCE CERTIFICATION (Attachment C), in accordance with e, below. A copy of the annual certification and report of noncompliance shall be incorporated into the CSOPPP and maintained for a period of five (5) years after the submission. This period may be extended by the Department (See N.J.A.C. 7:14A-6.6).
 - v. The permittee must annually re-submit an "Annual Permit Compliance Certification (See Attachment C) (with new signatures each year), accompanied by the annual report of noncompliance, if applicable. These annual re-certifications shall be submitted in the same calendar month as the Individual Authorization was issued. These re-certifications shall be submitted to the Department annually, at the address specified on the certification form provided by the Department, and shall be submitted with the appropriate fee required under N.J.A.C. 7:14A-3.
- b. Incidents of Noncompliance
- i. Applicability: This section is applicable to all permittees.
 - ii. Any noncompliance with this permit constitutes a violation of the New Jersey Water Pollution Control Act or other authority of N.J.A.C. 7:14A et seq., and is ground for enforcement action, for permit termination, revocation, and re-issuance or modification, or for denial of a permit renewal application (see N.J.A.C. 7:14A-16.).
 - iii. All instances of noncompliance, whether or not they have been previously reported, shall be reported to the Department in the annual report on noncompliance referenced in D.2.a.iii., above.
 - iv. Instances of noncompliance include, but are not limited to, the failure to comply with any deadline specified in the permit, the discharge of dry weather overflows, the failure to develop and implement proper operation and maintenance programs, the failure to develop and/or comply with a compliance schedule contained within the CSOPPP, the failure to perform the annual inspection, and the presence of other discharges.
- c. Extended Combined Sewer Overflows
- i. Applicability: This section is applicable to permittees of Combined Sewer Overflow Control Facilities and Combined Sewer Overflow Points.
 - ii. The permittee shall report all Combined Sewer Overflows which continue to discharge when no precipitation has occurred for at least 24 hours prior to the observation of the discharge event.
 - iii. The permittee shall report each Extended Combined Sewer Overflow using the reporting procedure for Dry Weather Overflows provided in C. Discharge Limitations, Subpart C2. Dry Weather Overflows which, in the permittee's judgement, is appropriate for the nature of the discharge event.
3. Other Discharges
- a. Applicability: This section is applicable to all permittees.

- b. If, after the effective date of the General Permit Authorization, it is discovered that the permittee owns and/or operates CSO Points not included in the initial Request for Authorization, the permittee shall within thirty (30) days submit an RFA for those discharges in accordance with B. of this permit.
- c. If, the permittee discovers that it owns and or operates discharges other than a CSO or separate stormwater, the permittee shall immediately discontinue the operation of such discharges and/or immediately apply for the appropriate New Jersey Pollutant Discharge Elimination System Discharge to Surface Water Permit in accordance with the NJPDES (See N.J.A.C. 7:14a-1 et seq.). The Department hereby reserves the right to take any enforcement action for unauthorized or unpermitted discharges.

E. SPECIAL CONDITIONS

1. Preparation and Implementation of the Combined Sewer Overflow Pollution Prevention Plan

- a. Applicability: This section is applicable to all permittees
- b. General Requirements
 - i. The permittee shall develop, implement, and maintain a Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) which meets the minimum content requirements of a CSOPPP, as specified in d. below. The CSOPPP shall be developed and implemented in accordance with the schedule specified in c. below.
- c. Deadlines and Certifications
 - i. On or before March 1, 1996, the permittee shall establish and implement a CSOPPP for the portions of the combined sewer system owned and/or operated by the permittee and subject to the requirements of this permit, and shall submit to the Department a properly executed "Combined Sewer Overflow Pollution Prevention Plan Preparation Certification" (See Attachment B).
- d. The CSOPPP shall, as minimum, contain the following:
 - i. Documentation of the procedures used to develop, evaluate and implement Interim Solids/Floatables Control Measures required in C.4.a., including the documentation required in C.4.a.vii.;
 - ii. Documentation of the procedures used to develop and implement the Long-Term Solids/Floatables Control Measures required in C.4.b., including the selected plan and corresponding implementation schedule;
 - iii. Documentation of the evaluation process, the findings of the inspections, the conclusions, and recommendations of the Annual Inspection and associated engineering assessments required in D.1.a.;
 - iv. A record of all incidents of noncompliance and copies of all reports associated with each incident of noncompliance required under D.2.;
 - v. The Facilities Inventory and Assessment required in C.6.c.;
 - vi. The Proper Operation and Maintenance Plan and Manual(s) required in C.5.c.;

- vii. A copy of all state and federal permits issued for the construction and operation of existing and proposed combined sewer system facilities, copies of each administrative order, administrative consent order, notice of violation, complaint filed, or other corrective or enforcement action(s) required by any governmental agencies with regard to the operation of the facilities by the applicant within the previous five (5) years;
 - viii. A copy of the completed reports/studies of the Combined Sewer Overflow Discharge Characterization Study required in E.2.; and
 - ix. Copies of all correspondence between the Department and the permittee concerning permit including the RFA.
- e. Additional Requirements
- i. Agency Review
 - (A) The permittee shall make the CSOPPP available upon request to an authorized representative of the Department.
 - (B) Upon review by an authorized representative, the Department may notify the permittee at any time that the CSOPPP does not meet one or more of the minimum requirements of this Subpart. Within the time period specified by the Department, the permittee shall amend the CSOPPP to adequately address all deficiencies and shall submit to the Department a written certification that such amendments have been incorporated.
 - ii. Amendments to the CSOPPP
 - CSOPPP's may be amended so long as they continue to meet the requirements of D.1. of this permit. Any amended CSOPPPs shall be signed, certified, implemented, retained, and otherwise treated in the same manner as the original CSOPPP.
 - iii. Public Review
 - All CSOPPPs prepared under this permit are considered reports that shall be available to the public for inspection and duplication under N.J.S.A. 58:10A-9.c. The permittee shall make the CSOPPPs available to interested parties upon request.

2. Preparation and Submission of the Combined Sewer Overflow Discharge Characterization Study

- a. Applicability: This section is applicable to all permittees of Combined Sewer Overflow Points.
- b. General Requirements: Permittees are required to develop and submit a Combined Sewer Overflow Discharge Characterization Study (The Study) consisting of a field calibrated and verified Combined Sewer Overflow Model designed to represent the combined sewer system's response to historical events of precipitation. The model shall be developed to demonstrate the relationship between rainfall, surface runoff (stormwater), sanitary sewage, the combined sewer system's characteristics, and combined sewer overflows with respect to quantity and quality. To comply with this requirement the permittee shall use the U.S. EPA approved Storm Water Management Model (SWMM). The permittee may petition the Department for the use of an equivalent model. The Department shall have the final determination of the acceptability of the proposed substitute model.

- c. Although The Study is considered one comprehensive analysis, the preparation and submission of The Study has been divided into six (6) specific individual components. The permittee shall prepare and submit each of the components of The Study in accordance with the schedule set forth in Table I. The permittee shall obtain approval from the Municipal Finance & Construction Element prior to proceeding with the development of each subsequent component of the study. The permittee shall submit each of the specified components to:

Division of Water Quality
Municipal Finance & Construction Element
Bureau of Engineering North
P.O. Box 425
Trenton, New Jersey 08625-0426

Each submission shall be transmitted to the Department by the permittee with a signed certification as provided in Attachment D, TRANSMITTED DOCUMENT CERTIFICATION.

- d. The permittee shall develop and submit The Study consisting of the individual components as described below:
- i. Monitoring Program Proposal and Work Plan
The Monitoring Proposal and Work Plan shall conform with the requirements of "GUIDANCE FOR PREPARATION OF COMBINED WORK/QUALITY ASSURANCE PROJECT PLANS FOR ENVIRONMENTAL MONITORING", dated May, 1984, (OWRS QA-1) prepared by the Office of Water Regulations and Standards, U.S. Environmental Protection Agency, Washington, D.C. 20460. At a minimum the report shall address all of the components, a through i through vi, of The Study.
 - ii. Service Area Drainage and Land Use Report
The permittee shall provide information used to construct the model and will contain, as a minimum, the information set forth in Table II. All methods of estimation used to produce the data will be presented in graphical, tabularized, and narrative formats as appropriate.
 - iii. Rainfall Monitoring Study.
The permittee shall perform a Rainfall Monitoring Study that shall include a historic precipitation analysis which, at a minimum, includes the evaluation of climatological records, and the determination of historic and measured rainfall event statistics. The permittee shall establish a rain gage network appropriate for the size of the study area and the model (SWMM) and continuously measure and record rainfall throughout the monitoring period. Precipitation data shall be correlated to other monitoring data in real-time.
 - iv. Sewer System Inventory and Assessment Report
The permittee shall develop and submit a report that provides both narrative and graphical descriptions of the sewer systems which contribute flow to the permittee's CSO Point. The report shall provide a comprehensive inventory of all elements of the combined sewer system including, but not limited to, all sewer lines, regulators, tide gates, diversion chambers, pumping stations interceptors, trunk sewers, and outfall structures. The report shall include operational status, condition, and hydraulic capacity of all facilities. Detailed drawings of all regulators, tide gates, and flow diversion structures in both plan and profile view are to be provided at a minimum. All information shall be qualified by field verifications.

- v. **Combined Sewer Overflow Monitoring Study**
The permittee shall perform monitoring work which will consist of collecting and analyzing representative samples of the actual CSOs during selected wet weather events in conformance with the schedule and requirements contained within the General Permit and the Department approved Monitoring Proposal and Work Plan. The monitoring requirements are provided in Table III. The permittee shall monitor a sufficient number of significant storm events to adequately calibrate and verify the model, at least two (2) significant wet weather events shall be evaluated. The frequency of sampling during the events shall not exceed one sample every fifteen (15) minutes, unless an alternative sampling protocol is approved by the Department.
 - vi. **Combined Sewer System Modeling Study**
The permittee shall develop a SWMM model, or other model approved by the Department of the permittee's combined sewer system and CSO Points in conformance with the schedule and requirements contained in this permit and the Department approved Monitoring Proposal and Work Plan.
- e. The submission of all of The Study's components shall be accompanied by a properly executed certification provided in Attachment D.

3. Other Permits or Regulatory Requirements

- a. Compliance with the conditions of this permit does not exempt from any other applicable permit or other regulatory requirements including, but not limited to, all other state, federal, local government, or Interstate Agency rules.

4. Penalties for Violations

- a. Section 10 of the New Jersey Water Pollution Control Act provides that any person who violates a permit condition is subject to a civil penalty each day of violation. Any person who willfully or negligently violates permit conditions is subject to a fine each day of violation, or to imprisonment, or both.
- b. Section 10 of the New Jersey Water Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine per violation, or by imprisonment, or both.
- c. Section 10 of the New Jersey Water Pollution Control Act provides that any person who knowingly makes a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under the New Jersey Water Pollution Control Act shall, upon conviction, be subject to a fine, or imprisonment, or both.
- d. Violation of any condition of this permit or the NJPDES regulations may be subject the permittee to an Assessment of Civil Administrative Penalties of up to \$50,000.00 per violation per day in accordance with N.J.S.A. 58:10A-1 et seq.

F. ATTACHMENT A: RFA CERTIFICATION

1. RFA Certification

- a. Every Request for Authorization (RFA) shall include the following RFA certification

- i. "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this RFA and all attached documents, and that this RFA and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining information, I believe that the information is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including the possibility of fine and/or imprisonment."
 - ii. "I also certify that I have made arrangements for publication, in a daily or weekly newspaper within the area affected by the facility identified in this RFA, of a notice which states that a request for authorization under General Permit No. NJ0105023 for Combined Sewer Systems has been submitted pursuant to N.J.A.C. 7:14A-6.13. This notice identifies the general permit number, the legal name, and address of the owner and/or operator, the facility name and address, and type of facilities, and the receiving surface water(s)."
 - iii. Name of Newspaper and Date of publication.
 - iv. "I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."
- b. The RFA certification (owner and/or Operator) shall be signed as follows:
- i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

G. ATTACHMENT B: COMBINED SEWER OVERFLOW POLLUTION PREVENTION PLAN CERTIFICATION

1. Combined Sewer Overflow Pollution Prevention Plan (owner and/or operator) Certification

- a. "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this "Combined Sewer Overflow Pollution Prevention Plan (CSOPPP) Certification, and any attached documents and in the CSOPPP, referred to in this certification, and that the CSOPPP Certification, and any attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that this CSOPPP certification is true, accurate, and complete and that the CSOPPP has been established in accordance with the requirements of General Permit No. NJ0105023."
- b. "I certify that the CSOPPP referred to in this CSOPPP Certification has been established and is being retained at the address cited in this certification, in accordance with Section E, Subpart 1. of General Permit No. NJ0105023, and that this CSOPPP will be fully implemented in accordance with the terms and conditions of that permit."

- c. " I am aware that, pursuant to the Water Pollution Control Act N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."
- d. This certification (owner and/or operator) shall be signed as follows:
 - i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;
- e. The CSOPPP is retained at the following address and is available for inspection.
 - i. Name of Location:
 - ii. Number and Street:
 - iii. City or Town:
 - iv. State & Zip Code:

H. ATTACHMENT C: ANNUAL PERMIT COMPLIANCE CERTIFICATION

1. Annual Permit Compliance Certification

- a. " I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Annual Permit Compliance Certification and all attached documents, including any report of non-compliance. Additionally, I certify that this Annual Permit Compliance Certification, and all attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining information, I believe that this Annual Permit Compliance Certification, and all attached documents, are true, accurate and complete.
- b. " I certify under penalty of law that the facilities regulated under NJPDES Permit No. NJ0105023, and authorized under the below listed Authorization Number, have been inspected in accordance with the terms and conditions of the General Permit No. NJ0105023 and that an evaluation of the records of activities, since the previous annual permit compliance evaluation, if any, for these facilities has been performed. I certify that (check appropriate response) the facilities:
 - i. ☐ are in compliance with the terms, conditions, and compliance schedules contained in the permit and that the annual inspection report (see Section D of General Permit No. NJ0105023) is and will be maintained as part of the CSOPPP, as required by Section D of General Permit No. NJ0105023.
 - ii. ☐ were not in compliance with all of the terms, conditions and compliance schedules contained in General Permit No. NJ0105023 and that a report of non-compliance (see Section D of the General Permit No. NJ0105023) has been submitted to the NJDEP with this Annual Permit Compliance Certification.

- c. " I am aware that, pursuant to the Water Pollution Control Act N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."
- d. This certification (owner and/or operator) shall be signed as follows:
 - i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

I. ATTACHMENT D: TRANSMITTED DOCUMENT CERTIFICATION

1. Transmitted Document Certification

- a. " I certify under penalty of law that I have personally examined and am familiar with the information within transmittal and all attached documents, which are individually listed (or described) on this Transmitted Certification, and that this transmittal and all attached documents were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information including the possibility of fine and/or imprisonment."
- b. This certification (owner and/or operator) shall be signed as follows:
 - i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

J. ATTACHMENT E: AUTHORIZED REPRESENTATIVE CERTIFICATION (OPTIONAL)

1. Authorized Representative Certification

- a. I, the owner and or/ I, the operator authorize the below named person to act as our agent/representative in all matters that pertain to our Request for Authorization, and/or for administrative actions relative to complying with the requirements as they apply to our facilities authorized under the NJPDES General Permit No. NJ0105123.
- b. The name and address of the Agent/ Authorized Representative is:
 - i. NAME:
 - ii. ADDRESS:
 - iii. CITY /TOWN:
 - iv. STATE & ZIP CODE:

- v. BUSINESS TELE:
- c. This certification (owner and/or operator) shall be signed as follows:
 - i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;
- d. I, the undersigned, agree to serve as agent/authorized representative for the above listed owner and/or operator.
- e. Signature of Agent/ Authorized Representative:

K. ATTACHMENT F: INTERIM SOLIDS/FLOATABLES CONTROL MEASURES IMPLEMENTATION CERTIFICATION

1. Interim Solids/Floatables Control Measures Implementation Certification

- a. " I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Interim Solids/Floatables Control Measures Implementation Certification, the Interim Solids/Floatables Control Measures implementation Schedule, and any attached documents, and that the Interim Solids/Floatables Control Measures Implementation Certification and any attached documents, were prepared by personnel under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my personal knowledge and/or my inquiry of those individuals immediately responsible for obtaining the information, I believe that that this Interim Solids/Floatables Control Measures Implementation Certification and Interim Solids/Floatables Control Measures Implementation Schedule are true, accurate, and completed and that the Interim Solids/Floatables Control Measures have been developed and implemented in accordance with Interim Solids/Floatables Control Plan, approved by the NJDEP, and with the requirements of General Permit No. NJ0105023."
- b. " I am aware that, pursuant to the Water Pollution Control Act, N.J.S.A. 58-10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation or certification in any application, record, or other document filed or required to be maintained under the Act, including fines and/or imprisonment."
- c. This certification (owner and/or operator) shall be signed as follows:
 - i. For a corporation, by a responsible corporate officer as described in N.J.A.C. 7:14A-4.9(a)1;
 - ii. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;
 - iii. For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official or;

L. Table I-COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY- SCHEDULE OF ACTIVITIES

- 1. The deadline for submission of Monitoring Program Proposal and Work Plan: March 1, 1996
- 2. The deadline for submission of Service Area Drainage and Land Use Report: March 1, 1996

3. The deadline for submission of Sewer System Inventory and Assessment Report : March 1, 1996
4. The deadline for submission of Rainfall Monitoring Study : Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
5. The deadline for submission of Combined Sewer Overflow Monitoring Study : Within 12 months of the permittee's receipt of the Department's written authorization to proceed.
6. The deadline for submission of Combined Sewer System Modeling Study: Within 12 months of the permittee's receipt of the Department's written authorization to proceed.

M. TABLE II: COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY INFORMATION TO BE INCLUDED IN THE SERVICE AREA DRAINAGE AND LAND USE REPORT

1. Items of concern regarding the Drainage Area Data for Subcatchment: Area, ground slope, overland flow width, subcatchment length, percent impervious cover.
2. Items of concern regarding the Drainage Area Data for Channel/pipe: Length, slope, shape, pipe configuration which shows connection & flow direction. Connections of significant non-residential users, separately sanitary sewered service area and separate storm water sewer system connections tributary to the combined sewer should be specifically noted.
3. Items of concern regarding the Map Scale: 1:2400
4. Items of concern regarding the Drainage Area Data for Service Area Map: Land use distribution (commercial/industrial, residential, park land, etc., areas served by separate sanitary and storm sewers, or those which contribute storm water, etc.)
5. Items of concern regarding the Drainage Area Data for Pollutant Build-up: Load factor for each land use and pollutant.
6. Items of concern regarding the Sewer Line Data for General: Service area population data.
7. Items of concern regarding the Sewer Line Data for Sewer Pipe: Size, slope, shape, and pipe configuration which shows connections including service area delineation. Location of metering stations, if applicable.
8. Items of concern regarding the Sewer Line Data for Dry Weather Flow: Average dry weather flow, and average concentration of each pollutant.
9. Items of concern regarding the Sewer Line Data for DTW: Capacity, location, average removal rate of each pollutant.
10. Items of concern regarding the Pumping Station for CSO Point: Location, type, and size or control, and relationship to sewer system (interceptor, outfall structure etc.)

N. TABLE III: COMBINED SEWER OVERFLOW DISCHARGE CHARACTERIZATION STUDY COMBINED SEWER OVERFLOW MONITORING STUDY MINIMUM MONITORING REQUIREMENTS

1. Chemical Oxygen Demand: Grab Sample
2. Five Day Biochemical Oxygen Demand: Grab Sample
3. Fecal Coliform: Grab Sample

4. **Suspended Solids: Grab Sample**
5. **Settleable Solids: Grab Sample**
6. **Total Dissolved Solids: Grab Sample**
7. **Nitrogen Series (ammonia, nitrites, nitrates, Total Kjeldahl Nitrogen): Grab Sample**
8. **Phosphorous Series (Orthophosphate & Total Phosphorous) : Grab Sample**
9. **Temperature: Grab Sample**
10. **Volumetric Flow Rate: Continuous Recording**
11. **pH: Grab Sample**
12. **Hardness: Grab Sample**
13. **Salinity: Grab Sample**
14. **Toxic-Metals(To be Specified by the Department): Composite**
15. **Enterococci: Grab Sample**

O. Long-term Control Plan Development

1. **Applicability: This section is applicable to all permittees of Combined Sewer Systems.**
2. **In accordance with the schedule contained in Subpart O.4 the permittee shall develop and submit to the Municipal Finance and Construction Element (MF&CE) a Combined Sewer Overflow (CSO) Long-term Control Plan that includes the elements contained in Section 0.3., below.**
3. **Contents of a Long -Term Control Plan Development**
 - a. **Public Participation Program - The permittee shall implement a Public Participation Program that will ensure the opportunity for participation by the public throughout the Long-term Control Plan development process. Public participation includes providing access to the decision-making process, seeking input from and conducting dialogue with the public, assimilating public viewpoints and preferences, and demonstrating that those viewpoints and preferences have been considered by the decision-making officials. Permittees shall develop and submit a Public Participation Program Work Plan to the Department for review prior to initiation of activities. Activities associated with developing and implementing a public participation work plan are presented in APPENDIX A.**
 - b. **Cost and Performance Analysis for Combined Sewer Overflow Points Operation.**
 - i. **Applicability: This section is applicable to all permittees of Combined Sewer Overflow Points.**
 - ii. **At a minimum, the Permittee shall, for each CSO Point, develop and evaluate control alternatives that will provide continuous year around disinfection prior to discharge into surface waters for each pathogen control performance objective specified in iii, below, as applicable to each CSO Point depending upon the surface water classification to which the CSO Point discharges.**

- iii. The pathogen control performance objectives applicable to each CSO Point are as follows:
 - (A) For all CSO Points that discharge into Classification FW2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (A), (E), (F), & (G) of (iv), below.
 - (B) For all CSO Points that discharge into Classification SE1 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (B), (E), (F), & (G) of (iv), below.
 - (C) For all CSO Points that discharge into Classification SE2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives (B), (C), (E), (F), & (G) of (iv), below.
 - (D) For all CSO Points that discharge into classification SE3 waters the permittee shall develop and evaluate pathogen control measure that can meet the pathogen control performance objectives (B), (D), (E), (F), & (G) of iv, below.
- iv. The pathogen control performance objectives are as specified below:
 - (A) Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and , Enterococci levels shall not exceed a geometric mean of 33/100 ml, nor shall any single sample exceed 61/100 ml.
 - (B) Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and, Enterococci levels shall not exceed a geometric mean of 35/100 ml, nor shall any single sample exceed 104/100 ml.
 - (C) Fecal coliform levels shall not exceed a geometric average of 770/100 ml.
 - (D) Fecal coliform levels shall not exceed a geometric average of 1500/100 ml.
 - (E) 50-percent reduction of fecal coliform loadings from current conditions,
 - (F) 85-percent reduction of fecal coliform loadings from the current conditions, and
 - (G) 95-percent reduction of fecal coliform loadings from the current conditions.
- v. At a minimum, the permittee shall evaluate the implementation of each of the disinfection processes with each of the disinfection technologies listed in APPENDIX B.
- c. Cost and Performance Analysis for Combined Sewer Collection and Conveyance Systems operation.
 - i. Applicability: This section is applicable to all permittees of Combined Sewer Collection and Conveyance Systems.

- ii. The permittee shall develop and evaluate controls that will result in the reduction of the frequency of CSO discharge events based on an average hydrologic year for each of frequencies of occurrence listed below. For the purposes of developing cost and performance relationships permittees are directed to use the 1988 rainfall at JFK Airport as the average hydrologic year. (The precipitation data set is available at the Division of Water Quality's website for permitting and technical at <http://www.state.nj.us/dep/dwq/gps.htm>.) The permittee shall develop alternatives that achieve each of the targeted frequencies of discharge events per year without increasing the peak volumetric flow rate of wastewater conveyed to the DTW for treatment. For the purposes of this section, the range of frequencies of occurrence of CSO discharge shall, at a minimum, include the following:
 - (A) zero overflow events per year,
 - (B) an average of three overflow events per year,
 - (C) an average of seven overflow events per year.
 - (D) an average of twelve overflow events per year, and
 - (E) an average of twenty overflow events per year.
- iii. To comply with c.ii, above, Permittees shall, at a minimum, evaluate each of the controls technologies listed in APPENDIX C.
- d. Cost and Performance Analysis for Combined Sewer Collection and Conveyance Systems and Combined Sewer Overflow Control Facilities operation.
 - i. Applicability: This section is applicable to all permittees of Combined Sewer Collection and Conveyance Systems and Combined Sewer Overflow Control Facilities.
 - ii. The permittee shall develop and evaluate a range of CSO control alternatives that would achieve incremental reductions of CSO flows and incremental increases in the conveyance of wastewater through the CSO Collection and Conveyance System to the Domestic Treatment Works.
 - iii. The permittee shall develop and evaluate Control Measures that shall result in an increase in the conveyance of wastewater from CSO Control Facilities to the DTW for treatment. The permittee shall develop and evaluate control measures that will achieve the performance objective for each of the increments listed below based upon current average dry weather flow tributary to each CSO Point.
 - (A) Two times the average dry weather peak volumetric flow rate of the CSS area,
 - (B) Four times the average dry weather peak volumetric flow rate of the CSS area,
 - (C) Six times the average dry weather peak volumetric flow rate of the CSS area, and
 - (D) Eight times the average dry weather peak volumetric flow rate of the CSS area.
 - iv. To comply with 3.d.ii & iii, above, Permittees shall, at a minimum, develop and evaluate control measures for each of the control technologies listed in APPENDIX D.
- e. Cost and Performance Analysis Report
 - i. Applicability: This section is applicable to all Permittees.
 - ii. The permittee shall develop and submit a Cost and Performance Analysis Report that demonstrates the relationships among the set of CSO control alternatives in terms of a specified performance objective and the projected construction/implementation costs for each the Permittee's CSO Points and/or conveyance facilities, as applicable.
 - iii. The Cost and Performance Analysis Report shall include, as a minimum, all of the information and items identified in APPENDIX E.

4. Schedules and Interim Deliverables

- a. On or before [Effective Date of Permit + 120-Days], the Permittee shall develop and submit to the MF&CE, a Public Participation Work Plan that defines how the permittee will comply with the requirements of O.3.a. An acceptable Public Participation Program Work Plan shall include, as a minimum, all of the information and items identified in APPENDIX A, as appropriate.
- b. The permittee shall within sixty (60) days of the Permittee's receipt of the Department's written comments on the Permittee's Public Participation Work Plan modify that submission addressing the Department's written comments and resubmit it to the Department.
- c. On or before [Effective Date of Permit + 180 Days], unless otherwise directed by the Department, the Permittee shall begin the implementation of the Public Participation Plan.
- d. On or before [Effective Date of Permit + 12 Months], the Permittee shall submit to the Municipal Finance & Construction Element an Interim Status Report that briefly summarizes how the permittee has complied with the requirements of Subpart O.3.a, b, c, & d. Long Term Control Plan Development.
- e. On or before [Effective Date of Permit + 30-Months], the Permittee shall submit to the MF&CE a Cost and Performance Analysis Report. The Cost and Performance Analysis Report shall include, at a minimum, all of the information and items specified in O.3.e, above.
- f. On or before [Effective Date of Permit + 30-Months], the Permittee shall submit a Public Participation Report. The Public Participation Report shall:
 - i. Summarize the public participation activities conducted;
 - ii. Describe the matters on which the public was consulted;
 - iii. Summarize the public views, significant comments, concerns and suggestions; and
 - iv. Summarize the Permittee's specific responses in terms of the proposed action or an explanation for rejection of proposals made by the public.

APPENDIX A CONTENTS OF A PUBLIC PARTICIPATION WORK PLAN

SYNOPSIS:

In developing a Long-term Control Plan, the permittee is required to employ a public participation process that actively involves the affected public in the decision-making process of developing, evaluating and selecting the Long-term CSO controls. The affected public includes ratepayers, industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy these downstream waters, and any other interested persons.

Public participation is that part of the decision-making process through which responsible officials become aware of public attitudes by providing ample opportunity for interested and affected parties to communicate their views. Public participation includes providing access to the decision-making process, seeking input from and conducting dialogue with the public, assimilating public viewpoints and preferences, and demonstrating that those viewpoints and preferences have been considered by the decision-making official. Disagreement on significant issues is likely among government agencies and the diverse groups interested in and affected by public policy decisions. Public agencies should encourage full presentation of issues at an early stage so that they can be resolved and timely decisions can be made. In the course of this process, responsible officials should make special efforts to encourage and assist participation by citizens representing themselves and by others whose resources and access to decision-making may be relatively limited.

A well-designed public participation program should involve the public in the decision-making process as it proceeds. Citizen advisory committees can serve as liaisons between municipal officials, the general public and the NJDEP. Public meetings, public hearings, workshops, and discussion panels provide effective forums to explain the alternatives and to obtain input from as many neighborhood, business, environmental, and civic organizations as possible. These meetings should be well advertised in local papers and on local radio stations. Interested parties should be encouraged to provide verbal and written comments and input. The public participation program should include activities designed to educate the public about the CSO program, informational material distributed through general mailing lists or inserted into monthly utility bills, and media briefings concerning specific projects or issues.

Public Participation during the Development and Evaluation of Alternatives

During the development and evaluation of alternatives, the goal of the public participation program shall be to involve citizens in the process of the development of alternative solutions that protect the waters of the State and consider the financial impacts to the community as a whole. During development and evaluation of CSO control alternatives, the following key information shall be presented to the public as it is developed:

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- Water quality goals for each receiving water segment;
- CSO control goals for each receiving water segment as developed under the presumption and/or demonstration approach options
- Types of control alternatives available to meet CSO control goals;
- CSO control alternatives identified to meet the control goals; and
- The process of evaluating and comparing various alternatives for CSO control.

These issues can be technically complex and require effort and imagination to present in a manner that will be understandable to the public. Technical jargon and complex charts and figures may be useful to and understandable by engineers but may not be clear or understandable to the lay person. Public confusion or lack of understanding can lead to skepticism, hostility, and the inability or unwillingness to participate. These reactions can be avoided by understanding the audience and taking the time to arrange and present the information in an appropriate format.

REQUIREMENTS:

This document serves as a general guidance for the minimum elements that shall be included in a Public Participation Work Plan (PPWP). The scope of each PPWP must be developed in consideration of the scope of the planning effort, the complexity of the water quality issues, and the size and make-up of the affected public. The Public Participation Program Work Plan shall include the following elements:

- A description of the work required by the permit and the reason for its proposal.
- A list of issues on which public comment/opinion by the public is specifically solicited.
- A list of segments of the public to be targeted by the public participation program. This list shall include government representatives, private citizens, public interest groups, people with economic interest in the proposed project, ratepayer, industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy the downstream waters, and any other interested persons. The target public must include people who reflect the character and the make-up of the community in the study area.
- A list of information dissemination mechanisms proposed to be used in the program. Information dissemination mechanisms include, but not limited to notices, field trips, pamphlets, brochures, newsletters, radio and TV announcements, new releases, sound track announcements, posters, fliers, lectures, etc. – anything which informs and educates the public.
- A list of consultative mechanisms proposed to be employed in the public participation program. The list of consultative mechanisms may include, but is not limited to, Citizen Advisory Committees (CACs), meeting workshops, questionnaires, interviews, telephone polls, meetings, hearings, responsive summaries, etc.
- A description of staff resources assigned to the public participation program and the name and telephone number of a contact person.
- A budget, detailed by category, for public participation activities, (Activities include but are not limited to, public meetings, public hearings, CAC meetings, CAC training,

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newsletters, mailing, etc. – any of the items listed under consultative and informal mechanisms).

- A month-by-month schedule of activities showing which mechanisms will be used at which points in the technical planning process.

The permittee shall, as a minimum, hold at least one public meeting. The permittee must summarize in the Public Participation Report how the permittee complied with provisions of the permit, including:

- Informing the affected public of the requirements of the permit and the public participation work required by the permit.
- The methodology used in developing, evaluating CSO Control Alternatives including:
- The identification and the development of control alternatives including a list and description of the alternatives selected as representative technologies or alternative control measures selected for further consideration.
- The basis for the preliminary sizing of the control alternatives.
- The alternatives considered, but rejected, and the basis for the rejection.
- The development of preliminary construction/implementation cost estimates, operation, and maintenance costs that have been evaluated.
- The basis for the projected decreases in pollutant loadings, frequencies of CSO events or increased conveyance capacities projected for each control alternative, as appropriate.

Upon conclusion of the development and evaluation of alternatives and as a joint submission with the Control Cost/Performance Analysis, the permittee shall submit a Public Participation Report. The Public Participation Report shall identify the public participation activity conducted; describe the matters on which the public was consulted; summarize the public's views, significant comments, criticisms and suggestions; and set forth the Permittee's specific responses in terms of modifications of the proposed action or an explanation for rejection of proposals made by the public.

APPENDIX B DISINFECTION TECHNOLOGIES

SYNOPSIS:

The National Combined Sewer Overflow Control Policy requires CSO permittees to undertake a process to develop CSO-LTCPs which includes the evaluation of alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses. The most significant water quality concern directly associated with CSOs is pathogens. Under this general permit, permittees are required to demonstrate cost and performance relationships of various pathogen control alternatives for a broad range of CSO Control Objectives.

REQUIREMENTS:

Permittee shall develop and evaluate a range of CSO control alternatives that will achieve incremental reductions in the loading affecting receiving water bacteria quality in terms of fecal Coliform and Enterococci and report the cost and performance relationships demonstrated by these analysis in both narrative and graphical form. **These studies are intended to be feasibility studies and not intended to be facility planning level analysis.**

To develop a cost and performance curve the range of alternatives shall span between the "no action" alternative (The current condition without application of pathogen controls.) to those controls necessary to meet Surface Water Quality Standards for bacterial quality criteria. At a minimum, the Permittee shall, for each CSO Point, develop and evaluate control alternatives that will provide continuous year round disinfection prior to discharge into surface waters for each pathogen control performance objective specified in a through g, below, that is applicable to each CSO Point depending upon the surface water classification to which the CSO Point discharges.

The pathogen control performance objectives applicable to each CSO Point are as follows:

- For all CSO Points that discharge into Classification FW2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives a, e, f & g.
- For all CSO Points that discharge into Classification SE1 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, e, f & g.
- For all CSO Points that discharge into Classification SE2 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, c, e, f & g.
- For all CSO Points that discharge into Classification SE3 waters the permittee shall develop and evaluate pathogen control measures that can meet the pathogen control performance objectives b, d, e, f & g.

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The pathogen control performance objectives are as specified below:

- a. Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and,
Enterococci levels shall not exceed a geometric mean of 33/100 ml, nor shall any single sample exceed 61/100 ml.
- b. Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml., and,
Enterococci levels shall not exceed a geometric mean of 35/100 ml, nor shall any single sample exceed 104/100 ml.
- c. Fecal coliform levels shall not exceed a geometric average of 770/100 ml.
- d. Fecal coliform levels shall not exceed a geometric average of 1500/100ml.
- e. 50-percent reduction of fecal Coliform loadings from the current conditions,
- f. 85-percent reduction of fecal Coliform loadings from the current conditions, and
- g. 95-percent reduction of fecal Coliform loadings from the current conditions.

Permittees shall develop control alternatives for loadings reduction potential in terms of fecal coliform and enterococci, for a and b, above, and based upon fecal coliform, only, for c through g. However, permittees are to report loading reductions for each specific range, listed above, in terms of both fecal Coliform and Enterococci. The loadings reduction anticipated for other parameters such as nutrients and oxygen-demanding substances, incidental to the application of controls for fecal Coliform and Enterococci, shall also be determined and reported for each specific range listed above. For the purposes of this permit, oxygen-demanding substances shall be reported using the parameters CBOD5 and Total Kjeldahl Nitrogen (TKN), while for nutrients the parameters Total Phosphorous and Total Nitrogen shall be used.

CSOs are intermittent in nature and are characterized by short duration and relatively large flow rates relative to base sewage flow, bacterial and organic loadings from the collection system may vary greatly, both within and between storm events. Therefore, CSO disinfection systems must be able to handle variable pollutant loadings and large fluctuations in flow.

An additional baseline consideration for the successful design of an effective CSO disinfection process is solids reduction. Bacteria embedded in particulate matter can be shielded from exposure to disinfectants. Often, particular matter (solids) must be removed from the CSO to ensure effective disinfection.

The applicability or suitability of any particular control process/technology depends upon a number of considerations and is likely to vary from location to location. The following are minimum requirements. The permittee is encouraged to explore other control process and technologies and levels of control not specifically mentioned in the permit. The permittee, as a minimum, shall, evaluate the implementation of each of the disinfection technologies listed below.

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- Chlorination (Chlorine Dioxide, Sodium Hypochlorite, and Calcium hypochlorite)
- Ozonation, and
- Ultraviolet Radiation

Permittees shall consider alternative control strategies that consolidate groups of CSO Points for centralized treatment and discharge.

In the development of cost estimates all process configurations must include costs associated with Solids/Floables Control and dechlorination facilities, if needed. All discharges from CSO Points remaining after application of control measures must conform to the current Solids/Floable Control requirement and the State Water Quality Standard for chlorine produced oxidants.

As a minimum, permittees with Combined Sewer Overflow Points are required to develop and evaluate high-rate disinfection processes utilizing the three disinfecting technologies, listed below, with each of the following rapid primary treatment processes:

- 1. Screening Technology and High-rate Disinfection**
Screening \Rightarrow High-rate Disinfection \Rightarrow Discharge
- 2. Vortex/Swirl Separation Technology and High-rate Disinfection**
Vortex/Swirl Separation \Rightarrow High-rate Disinfection \Rightarrow Discharge
- 3. Ballasted Flocculation Technology and High-rate Disinfection**
Ballasted Flocculation \Rightarrow High-rate Disinfection \Rightarrow Discharge

APPENDIX C MINIMUM CONTROL MEASURES FOR COMBINED SEWER COLLECTION AND CONVEYANCE SYSTEMS

SYNOPSIS:

The Permittee shall develop and evaluate controls that will result in the reduction of the frequency of CSO discharge events based on an average hydrologic year to each the frequencies of occurrence listed below. For the purposes of developing cost and performance relationships permittees are directed to use the 1988 recorded rainfall at JFK Airport as the average hydrologic year. **(The precipitation data set is available at the Division of Water Quality's website for permitting and technical information at <http://www.state.nj.us/dep/dwq/gps.htm>.)** The Permittee shall develop alternatives that achieve each of the targeted frequencies of discharge events per year without increasing the peak volumetric flow rate of wastewater conveyed to the Domestic Treatment Works (DTW) for treatment. For the purposes of this section, the range of frequencies of occurrence of CSO discharges shall, as a minimum, include the following:

- zero overflow events per year,
- an average of three overflow events per year,
- an average of seven overflow events per year,
- an average of twelve overflow events per year, and
- an average of twenty overflow events per year.

The applicability or suitability of any particular control process/technology depends upon a number of considerations and is likely to vary from location to location..

The permittee is encouraged to explore other control process and technologies and incremental levels of control not specifically mentioned in the permit.

These studies are intended to be feasibility studies and not intended to be facility planning level analysis. In these feasibility studies the permittee is required to investigate control technologies and the development of control alternatives including the preliminary sizing of the control alternatives; assessing implementation feasibility; developing preliminary construction/implementation cost estimates, operation, and maintenance costs; developing Present Worth Cost of the most cost effective and practical control strategies and the associated projected pollutant loadings reductions. Permittees are not required to perform detailed environmental and archeological assessments or to select a particular control strategy.

REQUIREMENTS:

As a minimum, permittees with Combined Sewer Collection and Conveyance Systems must develop and evaluate the Collection System Controls and Storage Technologies listed below.

Collection System Controls –

Collection System Controls reduce the CSO volume and frequency of CSO events by removing or diverting runoff, maximizing the volume of flow stored in the collection system or maximizing the capacity of the system to convey flow to the DTW. Collection System Controls that must be evaluated include, but are not limited to, the following:

Sewer Separation – Sewer Separation is the conversion of a Combined Sewer System (CSS) into separate storm water and sanitary sewage collection systems.

Infiltration/Inflow Control - Excessive infiltration and inflow (I/I) can increase operations and maintenance costs and can consume hydraulic capacity, both in the collection system and at the treatment plant. In CSSs, surface drainage is by design the primary source of inflow. Other sources of inflow in CSSs that might be appropriate to control include tidal inflow through leaking or missing tide gates and surface runoff from open spaces. Infiltration is ground water that enters the collection system through defective pipe joints, cracked or broken pipes manholes, footing drains, and other similar sources. Elimination of excessive Infiltration and Inflow in separate sanitary sewer systems tributary to a downstream combined sewer system can provide additional storage, conveyance and treatment capacity.

Storage technologies –

Storage technologies store flow for subsequent treatment at the DTW after downstream conveyance and treatment capacities are restored. Storage technologies that must be evaluated include, but are not limited to, In-line and Off-line storage controls.

In-line Storage - In-line storage is storage in series with the sewer. In-line storage can be developed in two ways: (1) construction of new tanks or oversized conduits to provide storage capacity or (2) construction of a flow regulator to optimize storage capacity in existing conduits. The new tanks or oversized conduits are designed to allow dry weather flow to pass through, while flows above a design peak are restricted, causing the tank or oversized conduit to fill. A flow regulator on an existing conduit functions under the same principle, with the existing conduit providing the storage volume.

Off-Line Storage-This technology reduces overflow quantity and frequency by diverting all or a portion of diverted wet weather combined flows and storing them in off-line storage tanks. The storage arrangement is considered to be parallel with the sewer. Stored flows are returned to the interceptor for conveyance to the treatment plant once system capacity is available. In some cases, flows are conveyed to a CSO treatment facility.

APPENDIX D
MINIMUM CONTROL MEASURES FOR
COMBINED SEWER COLLECTION AND CONVEYANCE
SYSTEMS AND
COMBINED SEWER OVERFLOW CONTROL FACILITIES

SYNOPSIS:

Permittees of Combined Sewer Collection and Conveyance Systems and Combined Sewer Overflow Control Facilities shall develop and evaluate Control Measures that shall result in an increase in the conveyance of wastewater from CSO Control Facilities to the DTW for treatment. The permittee shall develop and evaluate control measures that will achieve the performance objective for each of the increments listed below based upon current average dry weather flow tributary to each CSO Control Facility. At a minimum, Permittees must develop and evaluate each of the control measures listed below.

- a. Two times the average dry weather peak volumetric flow rate of the CSS area,
- b. Four times the average dry weather peak volumetric flow rate of the CSS area,
- c. Six times the average dry weather peak volumetric flow rate of the CSS area, and
- d. Eight times the average dry weather peak volumetric flow rate of the CSS area.

The applicability or suitability of any particular control process/technology depends upon a number of considerations and is likely to vary from location to location. The following are minimum requirements. The permittee is encouraged to explore other control process and technologies and levels of control not specifically mentioned in the permit.

These studies are intended to be feasibility studies and not intended to be facility planning level analysis. In these feasibility studies the permittee is required to investigate control technologies and the development of control alternatives including the preliminary sizing of the control alternatives; assessing implementation feasibility; developing preliminary construction/implementation cost estimates, operation, and maintenance costs; developing Present Worth Cost of the most cost effective and practical control strategies and the associated projected pollutant loadings reductions. Permittees are not required to perform detailed environmental and archeological assessments or to select a particular control strategy.

REQUIREMENTS:

At a minimum, permittees with Combined Sewer Collection and Conveyance Systems must develop and evaluate the Collection System Controls and Storage Technologies listed below.

Real Time Controls –

Real-Time Control (RTC) programs can provide integrated control of regulators, outfall gates, and pump station operations based on anticipated flows from individual rainfall events, with feedback control adjustments based on actual flow conditions within the system. Computer models associated with the RTC system allow an evaluation of

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expected system response to control commands before execution. Localized RTC may also be provided to individual dynamic regulators, based on feedback control from upstream and/or downstream flow monitoring equipment.

Collection System Controls –

Collection System Controls reduce the CSO volume and frequency of CSO events by removing or diverting runoff, maximizing the volume of flow stored in the collection system or maximizing the capacity of the system to convey flow to the DTW. Collection System Controls that must be evaluated include, but are not limited to, the following:

Sewer Separation –Sewer Separation is the conversion of a Combined Sewer System (CSS) into separate storm water and sanitary sewage collection systems.

Infiltration/Inflow Control –

Excessive infiltration and inflow (I/I) can increase operations and maintenance costs and can consume hydraulic capacity, both in the collection system and at the treatment plant. In CSSs, surface drainage is by design the primary source of inflow. Other sources of inflow in CSSs that may be appropriate to control, including tidal inflow through leaking or missing tide gates and surface runoff from open spaces. Infiltration is ground water that enters the collection system through defective pipe joints, cracked or broken pipes manholes, footing drains, and other similar sources. Elimination of excessive Infiltration and Inflow in separate sanitary sewer systems tributary to a downstream combined sewer system can provide additional storage, conveyance and treatment capacity.

CSO Control Facility Modifications

Permittees shall develop and evaluate Control Measures, which shall result in an increase in the conveyance of wastewater from CSO Control Facilities to the DTW for treatment. The permittee shall develop and evaluate modifying CSO Control Facilities (regulators) and increasing the interceptor conveyance capacity between the combined sewer collection system and the DTW for each of the increments listed below based upon current average dry weather flow tributary to each CSO Point.

- a. Two times the average Dry Weather Flow of the CSS area;
- b. Four times the average Dry Weather Flow of the CSS area;
- c. Six times the average Dry Weather Flow of the CSS area;and
- d. Eight times the average Dry Weather Flow of the CSS area.

APPENDIX E

COST AND PERFORMANCE ANALYSIS REPORT

SYNOPSIS:

Permittees are required to develop control alternatives based on the ability to achieve loading reduction in terms of fecal Coliform and Enterococci, reductions in the frequency of CSO events, and incremental increases in the conveyance of wastewater from CSO Control Facilities to DTW for treatment. Permittee shall determine and report loading reductions for fecal Coliform, Enterococci and for nutrients and oxygen-demanding substances that may result incidental to the application of the control measures. Oxygen-demanding substances shall be reported using the parameters CBOD5 and Total Kjeldahl Nitrogen (TKN). Phosphorous and Total Nitrogen shall be used for nutrient parameters.

The Permittee shall develop and submit a Cost and Performance Analysis Report that demonstrates the relationships among the set of CSO control alternatives in terms of a specified performance objective and the projected construction/implementation costs for each of the Permittee's CSO Points and/or conveyance facilities as applicable.

REQUIREMENTS:

The CSO Control Cost and Performance Analysis Report shall include:

- A report summarizing the permittees compliance with provisions of Sections O.3.b. through O.3.e
- Documentation of the methodology used in developing and evaluating CSO Control Alternatives including:
 - ! Documentation of the identification and the development of control alternatives including a list and description of the alternatives selected as representative technologies and/or alternative control measures selected for further consideration.
 - ! Documentation of the basis for the preliminary sizing of the control alternatives.
 - ! A summary of the alternatives considered, but determined infeasible, and the basis for the rejection.
 - ! Documentation of the development of preliminary construction/implementation cost estimates, operation, and maintenance costs.
 - ! Documentation of the basis for the anticipated decrease in pollutant loadings projected for each control alternative.
- CSO Controls Alternatives Cost and Performance Curves for the CSO Controls Alternatives that were evaluated.
 - ! Cost and Performance Curves for the evaluation of Disinfection Control Measures shall consist of narrative and graphical presentations of the relationship between the specified CSO Control Objectives and the Present Worth Cost of the most cost effective and practical control strategies. Cost and Performance Curves shall demonstrate the loadings reduction potential in terms of Fecal Coliform and Enterococci, CBOD5, Total Kjeldahl Nitrogen (TKN), Total Phosphorous and Total Nitrogen.

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- ! Cost and Performance Curves for the evaluation of control measures that reduce the frequency of CSO events shall consist of narrative and graphical presentations of the relationship between each of the specified CSO control objectives (frequencies of occurrence) and the Present Worth Costs of the most cost effective and practical control strategies.
- ! Cost and Performance Curves for the evaluation of control measures that increase the peak volumetric flow rate of wastewater conveyed from a CSO Control Facility to the DTW for treatment shall consist of narrative and graphical presentations of the relationship between the specified CSO control objectives and the Present Worth Costs of the most cost effective and practical control strategies.

Present Worth Costs Analysis

Calculate total present worth costs (TPW) for each selected alternative or control strategy assuming a design-life of 20-years in order to make a fair and equitable comparison of total project costs in terms of capital and operation and maintenance (O&M) costs. Present worth is the sum, which, if invested now at a given rate, would provide exactly the funds, required to make all futures payments.

Project costs include capital costs, annual O&M costs and life-cycle costs. Capital cost, the cost to build a particular project, includes construction cost, engineering costs for design and services during construction, legal and administrative costs, and typically a contingency. The contingency is usually developed as a percentage of the construction cost, and the engineering, legal, and administrative costs are usually combined as a percentage of the construction plus contingency. Annual O&M costs reflect the annual costs for labor, utilities, chemicals, spare parts, and other supplies required to operate and maintain the facilities proposed as part of the project.

Cost curves should also be indexed to account for inflation using the Engineering News Record Cost Correction Index (ENR CCI). Life-cycle costs refer to the total capital and O&M costs projected to be incurred over the design life of the project. Life-cycle costs can be conveniently expressed in terms of total present worth (TPW), which is the sum of money that, if invested now, would provide the funds necessary to cover all present and future costs of a project over the design-life of the project.

The TPW of a project is calculated by adding the initial capital cost to the present worth of annual O&M costs and then subtracting the present worth of the salvage value of the project (i.e., the depreciated value of the project at the end of its design life). The present worth of annual O&M costs is computed by multiplying the average annual O&M cost by the appropriate uniform series present worth factor, based on the given discount rate and design life. The discount rate to be used in the TPW analysis for facilities planning is set each year by EPA. The uniform series present worth factor can be obtained from tables in standard engineering economics textbooks. The present worth of the salvage value is computed by multiplying the salvage value by the appropriate single payment present worth factor, based on the given discount rate and design life. The value of land generally should not be depreciated and might even be assumed to increase in value over

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the course of the project design life. The value of the land should then be added to the depreciated value of the facility to obtain the total salvage value.

Continuous Simulation Modeling Analysis

For the purposes of developing cost and performance relationships permittees are directed to use the 1988 recorded rainfall at JFK Airport for continuous simulation modeling. An analysis of recorded rainfall at JFK Airport determined 1988 to be representative of overall long-term average conditions in terms of total volume of rainfall and storm duration. **The precipitation data set is available at the Division of Water Quality's website for permitting and technical information at <http://www.state.nj.us/dep/dwq/gps.htm>.**